TURBOCHEF

Accelerating the World of Cooking™

Service Manual

FOR THE TURBOCHEF i5 RAPID COOK OVEN

For further information, call
800.90TURBO
or
+1 214.379.6000

The information contained in this manual is important for the proper installation, use, maintenance, and repair of this oven. Follow these procedures and instructions to help ensure satisfactory baking results and years of trouble-free service.

Errors – descriptive, typographic, or pictorial – are subject to correction. Specifications are subject to change without notice.

Please carefully read this manual and retain it for future reference.

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Safety Instructions

Strictly adhere to the following safety precautions to reduce the risk of burns, electric shock, fire, injury, damage to oven or property near oven, or possible exposure to excessive microwave energy.

General Safety Information

- ✓ Read all instructions before using this appliance.
- ✓ Read and follow the specific "Precautions to be Observed Before and During Servicing to Avoid Possible Exposure to Excessive Microwave Energy" found on page ii.
- ✓ This appliance must be grounded. Connect only to properly grounded outlet. See "Grounding Instructions" found on page ii.
- ✓ Install or locate this appliance only in accordance with the provided installation instructions.
- ✓ Some products such as whole eggs and sealed containers (e.g., closed glass jars) may explode and should not be heated in this oven.
- ✓ Use this appliance only for its intended uses as described in this manual.
- ✓ This appliance should be serviced only by qualified service personnel. Contact the nearest authorized service facility for examination, repair, or adjustment.
- ✓ Keep cord away from heated surfaces.
- ✓ Liquids, such as water, coffee, or tea are able to be overheated beyond the boiling point without appearing to be boiling. Visible bubbling or boiling when the container is removed from the microwave oven is not always present. THIS COULD RESULT IN VERY HOT LIQUIDS SUDDENLY BOILING OVER WHEN THE CONTAINER IS DISTURBED OR A UTENSIL IS INSERTED INTO THE LIQUID.
- x DO NOT allow children to use this appliance.
- x DO NOT use corrosive chemicals or vapors in this appliance - it is not designed for industrial or laboratory use.
- x DO NOT operate this appliance if it has a damaged cord or plug, is not working properly, or has been damaged or dropped. See Power Cord Replacement found on page ii.
- x DO NOT cover or block any openings on this appliance.
- x DO NOT store this appliance outdoors.
- x DO NOT use this product near water (e.g., near a kitchen sink, in a wet basement, near a swimming pool).
- x DO NOT immerse cord or plug in water.
- x DO NOT let cord hang over the edge of table or counter.
- x DO NOT use a water jet for cleaning. See the Maintenance section (pages 7-8) for proper cleaning procedures.

Reducing Fire Risk

- ✓ Remove wire twist-ties from paper or plastic bags used to facilitate cooking in the oven.
- ✓ If materials inside the oven ignite, keep the oven door closed, turn the oven off, and disconnect the power cord or shut off power at the fuse or circuit breaker panel.
- ✓ If smoke is observed, switch off or unplug the oven. Keep the door closed to stifle any flames.
- x DO NOT use the cook cavity for storage purposes.
- x DO NOT overcook food. Carefully attend to the oven if paper, plastic, or other combustible materials are placed inside the oven to facilitate cooking.
- x DO NOT leave paper products, cooking utensils, or food in the cavity when not in use.

SAVE THESE INSTRUCTIONS

Grounding Instructions

This appliance must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This oven is equipped with a cord that has a grounding wire with a grounding plug, which must be plugged into an outlet that is properly installed and grounded. Consult a qualified electrician or serviceman if uncertain about the ability to follow grounding instructions or if doubt exists as to whether the appliance is properly grounded.

- x DO NOT use an extension cord. If the power cord is too short, have a qualified electrician or serviceman install an outlet near the appliance.

⚠ WARNING: Improper grounding can result in risk of electric shock.

Power Cord Replacement

If the power cord is damaged, it must be replaced by the manufacturer, its service agent, or a similarly qualified person.

Precautions to be Observed Before and During Servicing to Avoid Possible Exposure to Excessive Microwave Energy

(a) DO NOT operate or allow the oven to be operated with the door open.

(b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary: (1) interlock operation, (2) proper door closing, (3) seal and sealing surfaces (arcing, wear, and other damage), (4) damage to or loosening of hinges and latches, (5) evidence of dropping or abuse.

(c) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.

(d) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.

(e) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

RF Interference Considerations

The i5 oven generates radio frequency signals. This device has been tested and was determined to be in compliance with applicable portions of FCC part 18 requirements and to the protection requirements of Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electro-magnetic compatibility at the time of manufacture. However, some equipment with sensitivity to signals below these limits may experience interference.

If your equipment experiences interference:

- ✓ Increase the physical separation between this oven and the sensitive equipment.
- ✓ If the sensitive device can be grounded, do so following accepted grounding practices.
- ✓ If battery-powered microphones are being affected, ensure that the batteries are fully charged.
- ✓ Keep sensitive equipment on separate electrical circuits if possible.
- ✓ Route intercom wires, microphone wires, speaker cables, etc. away from the oven.

Specifications and Installation

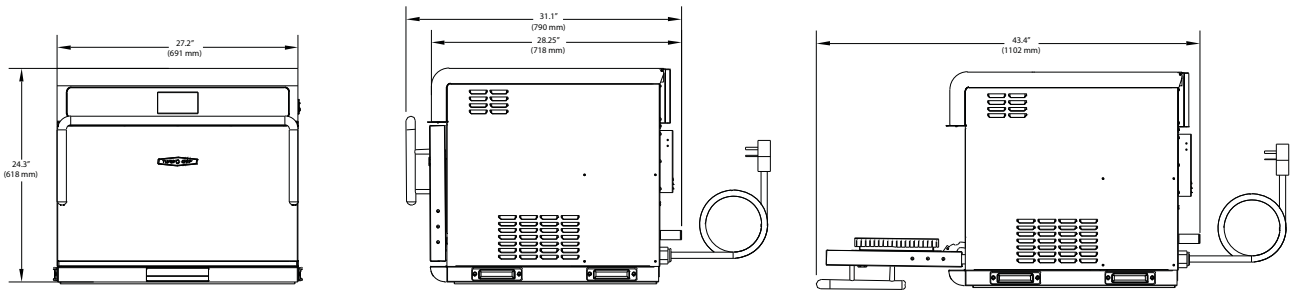

Figure 1: i5 Oven Dimensions

Theory of Operation

The i5 rapid cook oven combines precisely-controlled impinged air and microwave energy to create higher heat transfer rates than conventional ovens. Top-launched microwave and impinged air are stirred to further ensure even heat distribution, while impinged air enters the cavity from the top and bottom, generated by dual independently-controlled blower motors. The combination of this technology with the size of the cook cavity allows for higher throughput than other batch ovens.

This manual includes instructions for servicing, troubleshooting, installing, cleaning, and operating the i5 oven. If you have questions that are not addressed in this manual, contact Technical Service (800.90TURBO, +1 214-379-6000) or your Authorized Distributor.

Certifications

cULus, UL EPH, TÜV, CE, FDA

Dimensions

Oven Dimensions
Height: 24.3" (618 mm)
Width: 27.2" (691 mm)
Depth (door closed): 28.25" (718 mm)
Depth (door open): 43.4" (1102 mm)
Weight: 275 lbs (125 kg)

Cook Cavity Dimensions
Height: 10" (254 mm)
Width: 24" (610 mm)
Depth: 16" (406 mm)
Volume: 2.22 ft^3 (63 liters)

Clearances
Top: 16" (406 mm)
Sides: 2" (51 mm)

Oven Construction

Exterior
- Two-tone stainless steel front, top and sides
- 304 stainless steel removable grease pan
- Ergonomic door handle
- Rubber seal for surface mounting
- Side handles for lifting

Interior
- 304 stainless steel interior
- Fully-insulated cook chamber
- Removable rack with dual setting option
- Top and bottom jetplates

Electrical Specifications

TurboChef recommends a Type D circuit breaker for all installations outside the US.

Single Phase

i5 US model (i5-9500-1)
Voltage: 208/240 VAC*
Frequency: 60 Hz
Current: 48 amps
Max Input: 9500/11500 watts
Plug: NEMA 6-50P

i5 UK model (i5-9500-2-UK)
Voltage: 230 VAC
Frequency: 50 Hz
Current: 48 amps
Max Input: 10000 watts
Plug: IEC 309, 3-pin

i5 BK model (i5-9500-6-BK)
Voltage: 220 VAC
Frequency: 60 Hz
Current: 48 amps
Max Input: 10000 watts
Plug: IEC 309, 3-pin

i5 LA model (i5-9500-7-LA)
Voltage: 220 VAC
Frequency: 60 Hz
Current: 48 amps
Max Input: 10000 watts
Plug: NEMA 6-50P

i5 JK model (i5-9500-8-JK) - 50 Hz
(i5-9500-10-JK) - 60 Hz
Voltage: 200 VAC
Frequency: 50 or 60 Hz
Current: 46 amps
Max Input: 9000 watts
Plug: PSE-marked, 3-blade

* North America models include a voltage sensor which detects 208 or 240 VAC. The voltage sensor does not compensate for lack-of or over-voltage installations.

Multi Phase

i5 EW model (i5-9500-4-EW)
Voltage: 400 VAC
Frequency: 50 Hz
Current: 19 amps
Max Input: 10000 watts
Plug: IEC 309, 5-pin

i5 AU model (i5-9500-5-AU)
Voltage: 400 VAC
Frequency: 50 Hz
Current: 19 amps
Max Input: 10000 watts
Plug: Clipsal 5-pin

i5 KW model (i5-9500-12-KW)
Voltage: 400 VAC
Frequency: 60 Hz
Current: 19 amps
Max Input: 10000 watts
Plug: IEC 309, 5-pin

i5 ED model (i5-9500-3-ED)
Voltage: 230 VAC
Frequency: 50 Hz
Current: 28 amps
Max Input: 10000 watts
Plug: IEC 309, 4-pin

i5 SD model (i5-9500-13-SD)
Voltage: 230 VAC
Frequency: 60 Hz
Current: 28 amps
Max Input: 10000 watts
Plug: IEC 309, 4-pin

i5 JD model (i5-9500-9-JD) - 50 Hz
(i5-9500-11-JD) - 60 Hz
Voltage: 200 VAC
Frequency: 50 or 60 Hz
Current: 25 amps
Max Input: 10000 watts
Plug: PSE-marked, 4-blade

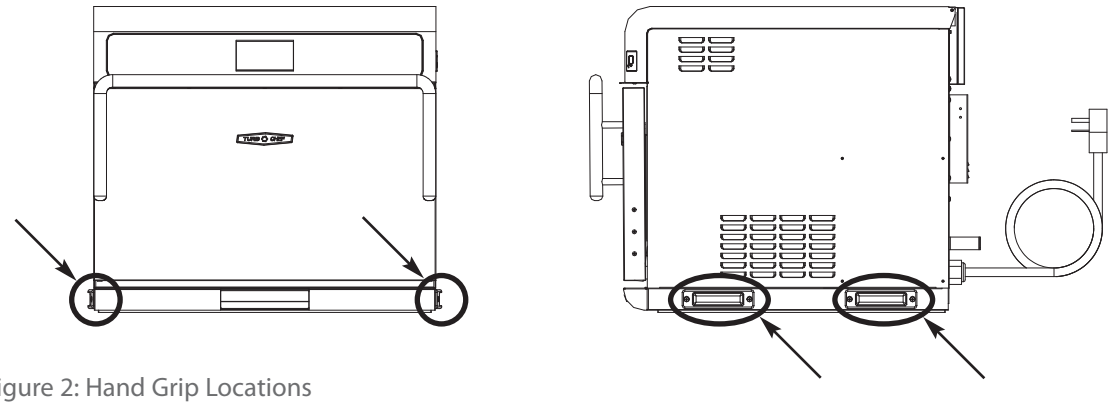

Figure 2: Hand Grip Locations

⚠ Install or locate this appliance only in accordance with the instructions below.

Unpacking Instructions

1. Remove oven from packaging.
2. Before discarding packaging, check thoroughly for accessories, consumables, and literature.
3. Discard packaging.
4. Check cook cavity thoroughly for accessories, consumables, and literature. Discard any packaging.

Lifting and Placing the Oven

⚠ WARNING: Oven weighs approximately 275 lbs (125 kg). Never lift with fewer than two people.

⚠ WARNING: Lift only using the provided hand grips. Never lift the oven by the door handle or by its base.

⚠ WARNING: The oven must be properly placed on a table or countertop at all times. TurboChef will not recognize a fallen oven as a warrantable claim and is not liable for any injuries that may result.

⚠ WARNING: This oven is not intended for built-in installation (i.e., installing the oven in any structure that surrounds the oven by five or more sides). Be sure to provide a minimum of 2" (51 mm) clearance for all sides and 16" (406 mm) clearance for the top.

1. Position one or more persons at the front and rear of the oven.
2. Place hands into grips (see Figure 2) and lift.
3. Place the oven on a surface that is at least 30" (762 mm) deep and capable of supporting 280 lbs (127 kg). If installing onto an oven cart, make sure the wheels/casters are locked.
4. Install the oven rack or other provided cooking surface.
5. Plug in the oven.

⚠ NOTE: The oven is primarily serviced through its top. DO NOT install shelving directly over the unit. The operator will be responsible for service charges incurred as a result of added time required to access the top of the oven.

Installation Near Open Heat Source

See Figure 4, page 5.

When placing a TurboChef oven near an open heat source, strictly adhere to the following:

- If the oven is being placed near a grill or stove, a divider must exist between the oven and the open heat source, with a minimum of 6” (152 mm) between the oven and the divider.
- If the oven is being placed near a fryer, a divider must exist between the oven and fryer, with a minimum of 12” (305 mm) between the oven and the divider.
- The height of the divider must be greater than or equal to the height of the oven (24.3” or 618 mm).
- Verify oven location has a minimum 16” (406 mm) clearance on top and minimum 2” (51 mm) of clearance on each side.

Optional Installation Items

See Figure 5, page 5.

TurboChef Oven Cart
- Part Number: NGC-1217-3
- Height: 32” (813 mm)
- Width: 27.8” (706 mm)
- Depth: 26.625” (676 mm)

Oven Restraint Kit
Part Number: TC3-0242

⚠ WARNING: The Oven Restraint Kit will not prevent the oven from falling off a countertop if the oven is pulled off or allowed to slide off the edge. Installation instructions are included with the kit.

ChefComm Pro
ChefComm Pro is a PC program for developing and maintaining menus and recipes. To purchase ChefComm Pro and a card reader, contact customer service at 800.90TURBO or +1 214-379-6000.

Voltage Selection

For North America oven models, the oven will detect 208 or 240 incoming voltage.

The initial voltage selection is typically completed before the oven is used by the customer. However, if incoming voltage for the store is different than the preset voltage, the operator will be required to select either 208 or 240 after pressing the On/Off key to turn on the oven. The correct voltage will be enlarged on the screen, identifying which option to select (see Figure 3 below).

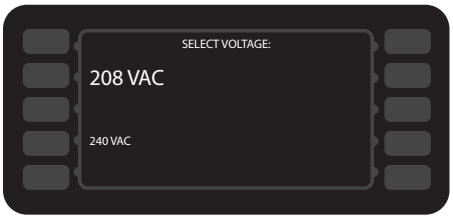

Figure 3: Selecting Voltage

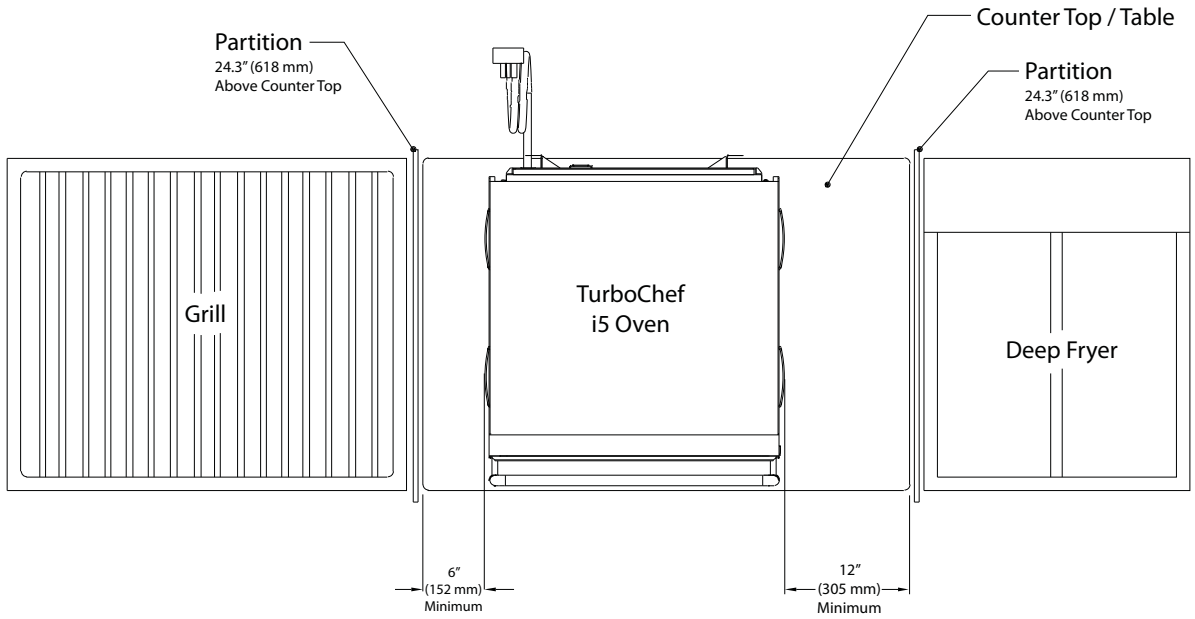

Figure 4: Installation Near Open Heat Source

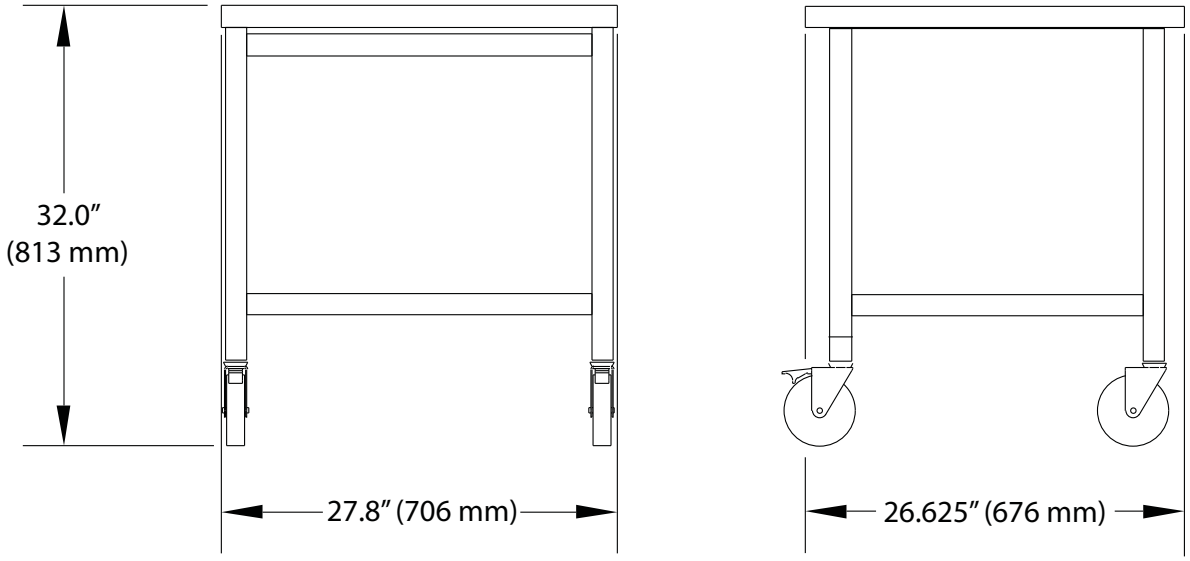

Figure 5: Oven Cart Dimensions

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Daily Maintenance

Daily Maintenance

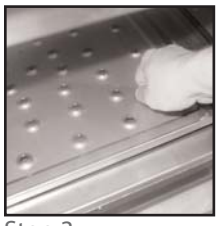
The following steps will help maintain your i5 Oven. Use only TurboChef Oven Cleaner and Oven Guard. The use of any other cleaning products can damage critical oven components, resulting in a non-warranty service call.

Supplies and Equipment

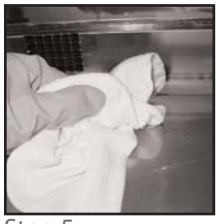
- TurboChef Oven Cleaner (Part Number: 103180)
- TurboChef Oven Guard (Part Number: 103181)
- Nylon scrub pad, cleaning towel, disposable gloves, protective eyewear, dust mask (optional), *pair of tongs wrapped with towel (optional - see step 11)

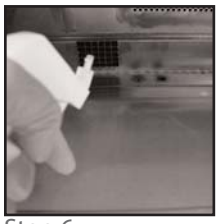
Step 1

Step 2


Step 3

Step 4


Step 5


Step 6

Step 1: Prepare the Oven

⚠ WARNING: Oven operates at approximately 450°F (232°C) and may cause injury if not allowed to cool properly.

- Turn off the oven by pressing the On/Off key.
- Slightly open the oven door. Cooling takes approximately 40 minutes.
- DO NOT attempt to clean the oven until the oven displays “Oven Off”.

Step 2: Remove and Clean the Wire Rack

⚠ WARNING: Be sure the oven interior is cool before you remove the wire rack.

- Wash, rinse, and sanitize the wire rack.

Step 3: Remove and Clean the Lower Jetplate

- Unscrew the two thumb screws on the lower jetplate.
- Lift the lower jetplate by gripping the thumb screws.
- Remove the lower jetplate.
- Wash, rinse, and sanitize the lower jetplate.

Step 4: Remove and Clean the Lower Air Diverter

- Remove the lower air diverter.
- Wash, rinse, and sanitize the lower air diverter.

⚠ WARNING: DO NOT discard the lower air diverter. The oven will not work without the lower air diverter installed.

Step 5: Wipe the Oven Interior

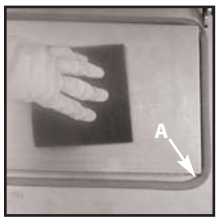
- Wipe any large particles from the oven interior with a damp towel.

Step 6: Clean the Oven Interior

- Spray oven cleaner onto the top, bottom, and sides of the oven interior.

⚠ CAUTION: DO NOT spray oven cleaner into the perforation on the back oven wall. Doing so can damage critical oven components, resulting in a non-warranty service call.

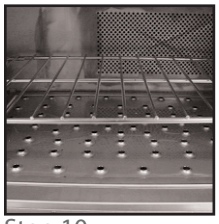
- Allow Oven Cleaner to penetrate stains for five minutes.
- Clean the oven interior with a nylon scrub pad.

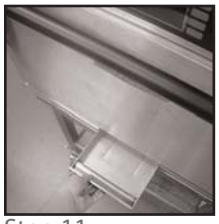


Step 7

Step 8

Step 9


Step 10


Step 11

Step 12

Step 13

Step 7: Clean and Dry the Oven Door

⚠ CAUTION: DO NOT spray oven cleaner directly onto the oven door gasket (reference "A" in adjacent photo) or saturate it with water.

⚠ CAUTION: DO NOT scrub or attempt to clean the oven door gasket. Doing so may cause the oven door to misalign, resulting in a non-warranty service call.

- Clean oven door with oven cleaner and a nylon scrub pad.
- Wipe the oven door with a damp towel.

Step 8: Rinse the Oven Interior

⚠ CAUTION: DO NOT use a hose or water jet for cleaning. Doing so can damage critical oven components, resulting in a non-warranty service call.

- Rinse the oven interior with clean water.
- Dry the oven interior with a clean towel.

Step 9: Apply TurboChef Oven Guard

- Spray Oven Guard onto a clean towel.
- Wipe the oven's interior walls and the inside of the oven door.

⚠ CAUTION: DO NOT apply Oven Guard to the oven door gasket. Doing so may damage the gasket, resulting in a non-warranty service call.

Step 10: Reinstall Components

- Reinstall the lower air diverter.
- Reinstall the lower jetplate. Screw in the two thumb screws to lock the lower jetplate in place.
- Reinstall the wire rack.
- Close the oven door.

Step 11: Clean the Drain Pan

- Remove the drain pan entirely from the bottom of the oven.
- Wipe down* the inside of the area the drain pan fits within.
- Empty, clean, and reinstall the drain pan.

⚠ CAUTION: Ensure the drain pan's outer edge is flush with the door panel (i.e. not sticking out). Failure to do so will damage the oven door, resulting in a non-warranty service call.

Step 12: Clean the Oven Exterior

- Wipe the oven exterior with a clean, damp towel.

⚠ CAUTION: DO NOT spray chemicals into any openings, such as the louvers on the side panels or the rear vent catalyst housing. Doing so can damage critical oven components, resulting in a non-warranty service call.

Step 13: Clean the Air Filter (once a week)

- Remove the air filter from the back panel.
- Wash in dishwasher or rinse with hot water.
- DO NOT use a water jet. Doing so will shorten the life of the filter.
- Reinstall the air filter.

⚠ CAUTION: DO NOT operate the oven without the air filter in place.

Oven Controls and Cooking

Figure 6: Oven Controls

Oven Controls

1. Info Key
When the oven is off or cooling down, press to access the INFO MODE (see page 13).

2. On/Off Key
When the oven is cooling down or off, press to turn on the oven.

When the oven is on or warming up, press to turn off the oven.

When the oven is in the INFO MODE (see page 13), press to return the oven to the "Cooling Down/ Oven Off" screen.

3. Display
The display shows information relevant to the current oven operation and/or user options.

4. Soft Keys
There are ten soft keys - five to the left (L1 thru L5, where L1 = top) and right (R1 thru R5, where R1 = top) of the display. Press a soft key to select an option adjacent to that key on the display.

5. Back/Stop Key
When the oven is cooking, press the Back/Stop key to immediately terminate a cook cycle.

When the oven is in the IDLE MODE (see page 11, MODE 5) or the INFO MODE (see page 13), press to return to the previous screen.

6. Up and Down Keys
When the oven is ready to cook (i.e., warmed up and waiting for a cook command), press the Up or Down key to view additional food groups (if applicable).

When the oven is in the INFO MODE (see page 13), press to navigate between and within screens.

7. Enter Key
Press the Enter key to confirm a selection (where applicable).

8. Numeric Keypad
Use the numeric keypad to program the oven or modify cook settings. The numeric keypad also contains a Back/Stop key and an Enter key, which are functionally identical to Items 5 and 7 (above).

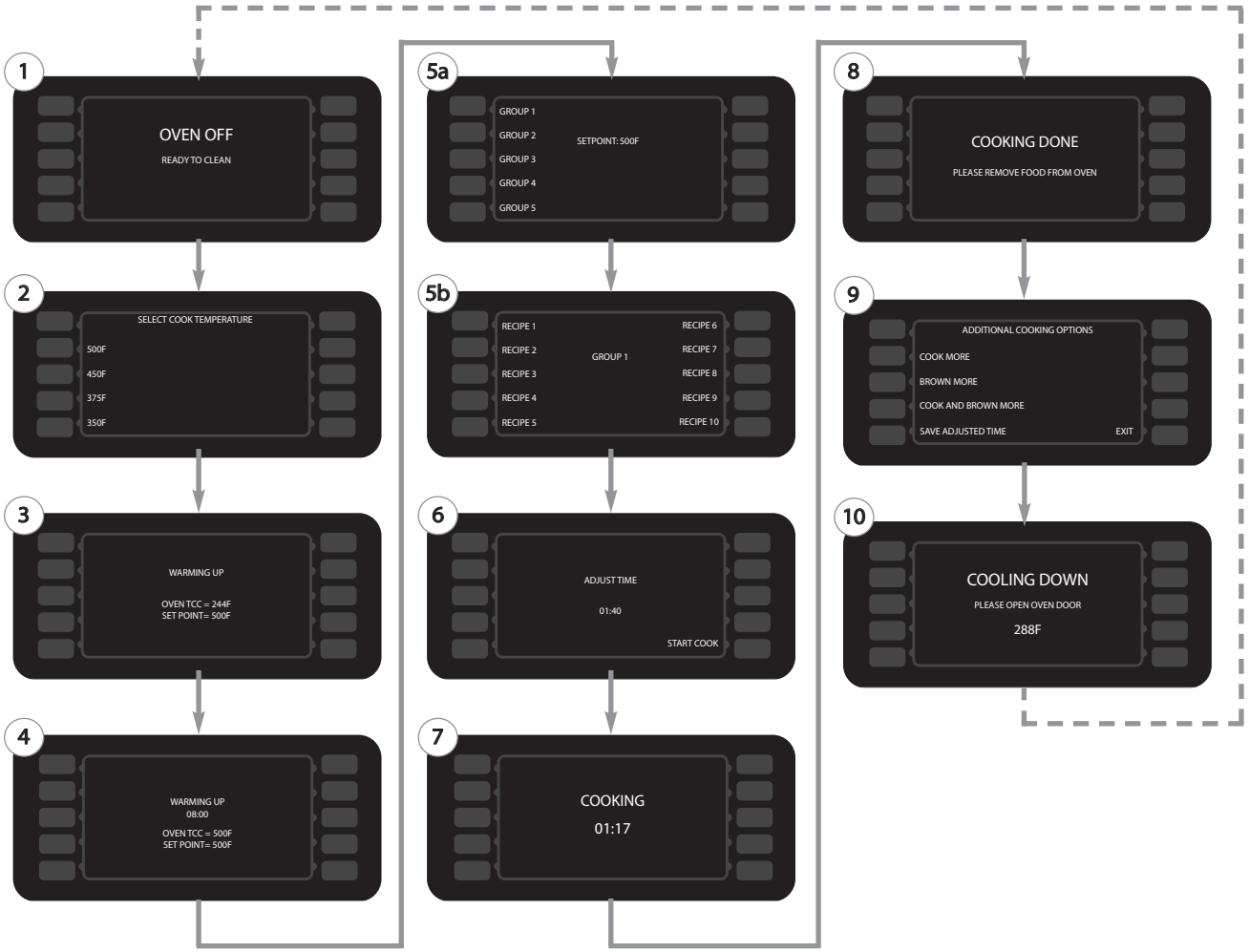


Figure 7: Standard Operation Modes

Cooking

This section explains how to cook a food product by describing the "standard operation" modes through which the oven progresses.

The oven is preprogrammed with recipe settings at the time of manufacture and is ready to operate out of the box. If these settings are erased, new menu settings must be either loaded via smart card/USB drive (page 17) or programmed manually (pages 19-21). The oven will not cook unless settings are present.

Note that modes are not always sequential, as shown in Figure 7, above. Typically, modes 5-9 will be repeated before cooling the oven (mode 10).

MODE 1: Oven Off
MODE 2: Temperature Select (if applicable)
MODE 3: Warming Up
MODE 4: Soak
MODE 5: Ready to Cook (or "Idle")
MODE 6: Adjust Time (if enabled)
MODE 7: Cooking
MODE 8: Remove Food from Oven
MODE 9: Cook More (if enabled)
MODE 10: Cooling Down

Mode 1: Oven Off

Mode during which all cooking components are off and the oven temperature has receded below 150°F (66°C), but the display and keypad remain on.

Happens When...
- The oven completes MODE 10.

Goes To...
- MODE 2 when On/Off key is pressed.
- INFO MODE (page 13) when Info key is pressed.

Mode 2: Temperature Select

NOTE: If cooking with only one temperature, this screen will be bypassed.

The i5 Oven can store up to four different cook temperature settings. Each temperature setting has 5 food groups assigned to it, each consisting of 10 food recipes (50 recipes per temperature setting).

NOTE: Earlier i5 software versions store only two temperatures, each containing 100 food recipes.

The operator will be able to cook only recipes associated with the selected temperature setting. See "Edit Mode," page 19 for more information on using and changing multiple temperatures.

To select a temperature (if applicable), press the adjacent soft key.

Happens When...
- The On/Off key is pressed from MODE 1.
- The Back key is pressed from MODE 3.

Goes To...
- MODE 3 when a temperature is selected.
- MODE 1 or 10 if the On/Off key is pressed.

Mode 3: Warming Up

Mode during which the oven warms to the pre-set cook temperature.

Happens When...
- A temperature is selected from MODE 2 (if multiple temperatures are present).
- On/Off key is pressed from MODE 1 or 10 (if single temperature is present).

Goes To...
- MODE 4 when the oven temperature reaches the selected set temperature - if the oven temperature needed to recover more than 125°F (70°C) at the time warmup initiated.
- MODE 5 when the oven temperature reaches the selected set temperature - if the oven temperature needed to recover less than 126°F (70°C) at the time warmup initiated.
- MODE 10 if the On/Off key is pressed.

Mode 4: Soak

SOAK MODE provides an additional 8 minutes of warmup time for the cook cavity surfaces to warm.

Happens When...
- MODE 3 completes - if the oven temperature needed to recover more than 125°F (70°C) at the time warmup initiated.

Goes To...
- MODE 5 when counter reads 00:00.
- MODE 10 if the On/Off key is pressed.

Mode 5: Ready to Cook (or "Idle")

Mode during which a food group and item can be selected for cooking.

⚠ WARNING: Inside of oven and oven door are hot! Use extreme caution.

1. Place the food into the oven.
2. Select a food group by pressing its adjacent soft key, or press the Up key or Down key for additional food groups, if available.
3. Select an item to cook by pressing its adjacent soft key.

Happens When...
- MODE 3 or 4 completes.

Goes To...
- MODE 6 if food item is selected and "Adjust Time" is enabled (see page 14).
- MODE 7 if food item is selected and "Adjust Time" is disabled.
- MODE 10 if the On/Off key is pressed.

Mode 6: Adjust Time

After a food item has been selected to cook, it may be necessary to change the cook time. Do so using the number keys, and then press the Enter key to confirm the change.

The ADJUST TIME MODE can be turned on or off from the "Options" screen (see page 14). It is turned off by default.

Happens When...
- ADJUST TIME MODE is enabled and a food item is selected from MODE 5.

Goes To...
- MODE 7 when "Start Cook" is selected.
- MODE 10 if the On/Off key is pressed.

Mode 7: Cooking

Mode during which the oven cooks a food item.

NOTE: To immediately terminate a cook cycle, press the Back/Stop key.

NOTE: If the oven door is opened during a cook cycle, the cycle will pause until the door is closed and "Resume" is selected.

Happens When...
- A food item is selected from MODE 5 if MODE 6 is disabled.
- "Start Cook" is selected from MODE 6.

Goes To...
- MODE 8 when the cook cycle completes.

Mode 8: Remove Food from Oven

Mode during which the oven beeps until the oven door is opened. During this mode, the oven temperature remains constant.

⚠ WARNING: Dish and inside of oven/oven door are hot! Use extreme caution.

Happens When...
- A cook cycle completes.

Goes To...
- MODE 9 if "Cook More" is enabled (page 14).
- MODE 5 if "Cook More" is disabled.
- MODE 10 if the On/Off key is pressed.

Mode 9: Cook More

At the completion of a cook cycle, the user has the option to cook an item longer per the following:

- Select "cook more" if the inside temperature of the dish is below the desired range.
- Select "brown more" if the outside of the dish requires more browning or crispness.
- Select "cook and brown more" if both the inside and outside of the dish are not done.
- Select "save time" to save any change to the cook time made during MODE 6. Note that this option is not available if MODE 6 is disabled.
- Select "exit" to return to the food group selection screen.

Cook More mode can be enabled/disabled from the Options menu (see page 14). It is disabled by default.

Happens When...
- A cook cycle completes.

Goes To...
- MODE 7 if one of the "Cook More" options is selected.
- MODE 5 if "Save Time" is selected, "Exit" is selected, or if nothing is selected after 10 seconds.
- MODE 10 if the On/Off key is pressed.

Mode 10: Cooling Down

Mode during which the oven blows cool air into the cook cavity to return it to room temperature.

Happens When...
- The On/Off key is pressed from MODES 2-6, 8, or 9.

Goes To...
- MODE 1 when the oven temperature recedes below 150°F (66°C).
- INFO MODE (page 13) when the Info key is pressed.

Overview of the Info Mode

The INFO MODE serves four main purposes:
1. To display oven information.
2. To provide access to TEST MODE and additional diagnostic tools for service technicians.
3. To turn oven options and features on/off.
4. To update oven settings.

To access the INFO MODE, simply press the Info key when the oven is either off or cooling down.

The INFO MODE consists of two screens. To toggle between screens, press the Up key or Down key.

From screen 1 of the INFO MODE (Figure 8):
- View the oven serial number
- View the oven software version
- View the menu part number and revision
- View the last temperature selected to cook
- View the electrical compartment temperature
- View the cook counter, total cook time, magnetron time, and total oven on time
- View the operating voltage (North America models only)
- Access the fault log
- Access service phone numbers
- Reset the oven

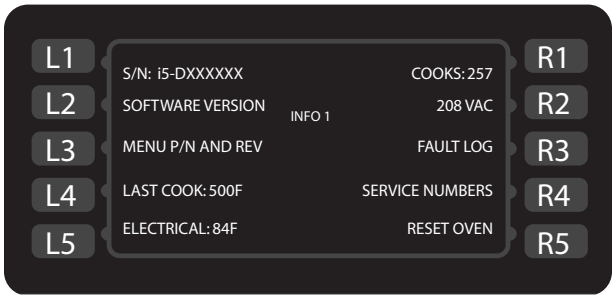


Figure 8: Info Mode Screen 1

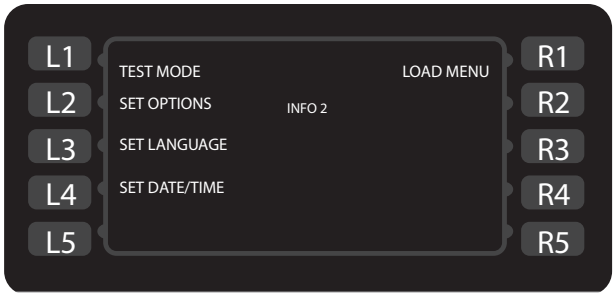


Figure 9: Info Mode Screen 2

From screen 2 of the INFO MODE (Figure 9):
- Access TEST MODE
- Access the "Options" screen
- Set the language (not available on all models)
- Set the date/time
- Access the "Load Menu" screen

Viewing Cook Counter/Time Logs

From screen 1 of INFO MODE, press the R1 soft key:
- Once to display the cook counter.
- Twice to display total cook time.
- Three times to display total magnetron time.
- Four times to display total "oven on" time.

Viewing the Fault Log

Figures 10-11. This log is read-only. To zero the fault counters, see page 15. For more information on faults, see pages 37-38.

From screen 1 of the INFO MODE, press the R3 soft key to view the fault log (Figure 10). To view a detailed log of each fault occurrence (Figure 11), press the soft key adjacent to the fault code.

Viewing the Service Numbers

From screen 1 of the INFO MODE, press the R4 soft key to view the phone numbers for TurboChef Technical Support.

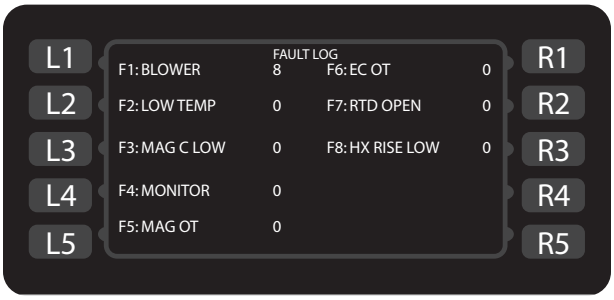


Figure 10: Fault Log

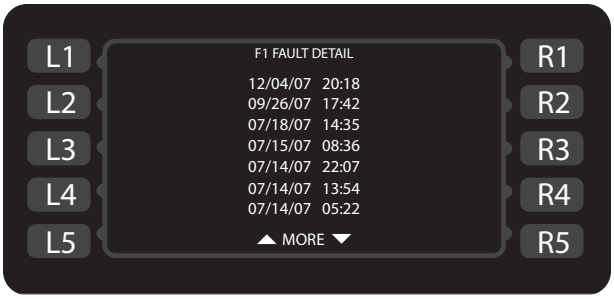


Figure 11: Fault Detail

Info Mode

Resetting the Oven

Resetting the oven is one way to potentially clear an error message, should one occur. From screen 1 of the INFO MODE, press the R5 soft key.

Turning Oven Options On/Off

Figure 12.

From screen 2 of the INFO MODE, press the L2 soft key to access the "Options" screen. When prompted, enter the password 9 4 2 8 and press the Enter key.

From the "Options" screen, the following oven options can be turned on or off:

- "Adjust Time" screen (page 11 for more details)
- "Cook More" screen (page 12 for more details)
- Edit Mode (page 19 for more details)
- "Load Menu" screen (page 17 for more details)
- Demo Mode (TurboChef use only)
- DHCP (TurboChef use only)

Setting the Language

NOTE: Not available on some oven models.

From screen 2 of the INFO MODE, press the L3 soft key to set a different language. Each time L3 is pressed, a different language is selected in the following order: English (default), Spanish, French, German, Portuguese, Italian, Russian, Greek, Polish.

Setting the Date/Time

Figure 13.

Having an accurate date and time is important for logging oven counts, diagnostics, and fault conditions, should any occur. The oven time and date are set at the time of manufacture; however, the operator may at some point be required to make an adjustment.

From screen 2 of the INFO MODE, press the L4 soft key to access the "Set Date/Time" screen.

To set the date and time,

1. Use the L3 and R3 soft keys (middle left and middle right) to navigate between fields.
2. Use the numeric keypad to enter the month, day, and year, followed by the hour and minute.

NOTE: The clock is a 24-hour clock (e.g., 20:30 = 8:30 PM).

3. Select "Save" to save your changes or "Cancel" to cancel and exit the screen.

NOTE: The oven will not retain the time if it is left unplugged for two or more weeks.

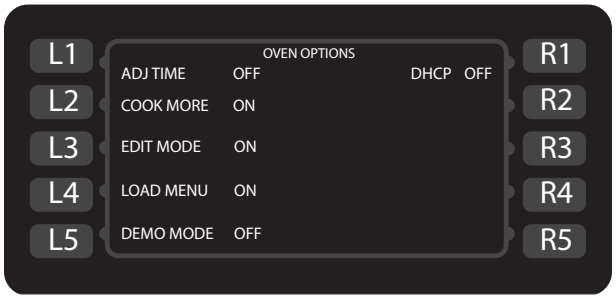


Figure 12: Options Screen

Figure 13: Set Date/Time

Test Mode - Testing Oven Parts

From screen 2 of the Info mode, press the L1 soft key to access TEST MODE. When prompted, enter the password 9 4 2 8 and press the Enter key.

From TEST MODE, the oven's components can be tested independently, or a comprehensive/ selective self-test can be run. Unless otherwise specified, idle airflow is set to 10% and the stirrer motor is turned on.

Top Blower

Press the L2 soft key to increase top blower speed in 10% increments.

NOTE: While the top blower is being tested, the bottom blower remains at 10% idle airflow.

Bottom Blower

Press the L3 soft key to increase bottom blower speed in 10% increments.

NOTE: While bottom blower is being tested, the top blower remains at 10% idle airflow.

Heaters

Press the L4 soft key to turn heaters on/off.

NOTE: When the heaters are not being tested, make sure they are turned off; otherwise, the oven will overheat.

Magnetron Test

Press and hold the L5 soft key to turn on the magnetrons. To turn off the magnetrons, simply let go of the L5 soft key.

Stirrer

Press the R1 soft key to turn the stirrer on/off.

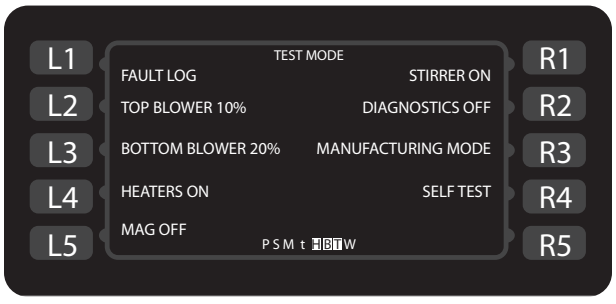


Figure 14: Test Mode

Test Mode - Status Indicators

Figure 14. The status indicators are located at the bottom of the TEST MODE screen, and consist of:

- P = Primary switch (backlit = open)
- S = Secondary switch (backlit = open)
- M = Monitor switch (backlit = open)
- t = Magnetron thermostat (backlit = open)
- H = Heaters (backlit = on)
- B = Bottom blower (backlit = on)
- T = Top blower (backlit = on)
- W = Microwave (backlit = on)

In Figure 14:

- All three door switches are engaged (closed).
- The heaters are on.
- Both blower motors are on.
- Microwave is not being used.

Test Mode - Fault Log

Press the L1 soft key to access the fault log.

This fault log is identical to the one accessible from screen 1 of the INFO MODE (page 13), except on this screen, pressing the 0 key clears all faults.

Test Mode - Turning On/Off Diagnostic Mode

Press the R2 soft key to place the oven in DIAGNOSTIC MODE. When in DIAGNOSTIC MODE, the oven displays additional cooking parameters during a cook cycle, including:

- Event currently being cooked
- Time left per event
- % wave, % top air, % bottom air
- Status indicators
- Group and recipe name
- CC temperature
- CC set point

For normal oven operation, ensure DIAGNOSTIC MODE is turned off.

Test Mode - Self Test

From TEST MODE, press the R4 soft key to access the "Self Test" screen (Figure 15). From the "Self Test" screen:

- L1 soft key initiates a comprehensive self test. The oven will check the door switches, blowers, magnetrons, and heaters in sequence.
- L2 soft key initiates a door switch test only.
- L3 soft key initiates a blower test only.
- L4 soft key initiates a magnetron test only.
- L5 soft key initiates a heater test only.

When each test completes, the oven will display PASS or FAIL.

Test Mode - Manufacturing Mode

Press the R3 soft key to place the oven in MANUFACTURING MODE (Figure 16). When in MANUFACTURING MODE, the following tests and settings can be accessed:

- Microwave leakage test
- Microwave power test
- Burn in
- Serial number edit
- Temperature measurement (F or C)
- Self test (same as TEST MODE).
- Erase/default oven settings

Microwave Leakage Test

Press the L1 soft key to initiate the microwave leakage test. The oven will warm up to 500°F (260°C). When warmup is complete, insert the water load. Follow the steps on page 27.

Microwave Power Test

This test should only be performed by the manufacturer.

Burn-In

Press the L3 soft key to initiate a 25-minute burn-in. This feature helps ensure all cavity walls reach thermal equilibrium before testing is conducted.

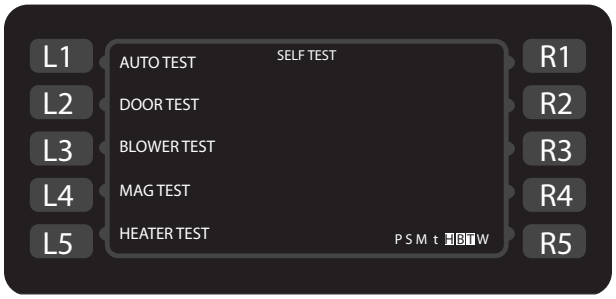


Figure 15: Self Test

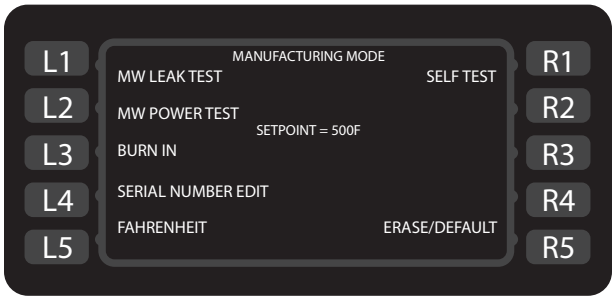


Figure 16: Manufacturing Mode

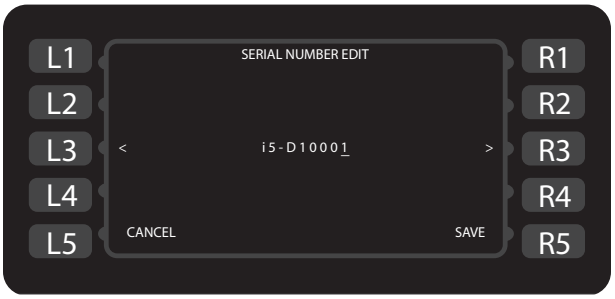


Figure 17: Serial Number Edit

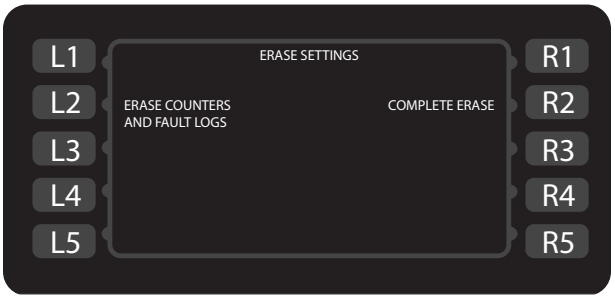


Figure 18: Erase Settings

Serial Number Edit

Press the L4 soft key to access the "Edit Serial Number" screen. To edit the serial number:

- Use the number/letter keys to change a character. After one second, the cursor will advance to the next character.
- Press the R3 soft key to advance to the next character.
- Press the L3 soft key to return to the previous character.
- Press the R5 soft key to save the changes or the L5 soft key to cancel.

Changing Temperature Measurement Setting

From the manufacturing mode screen, press the L5 soft key to change the temperature measurement from Fahrenheit to Celsius, or vice versa.

Self Test

Press the R1 soft key to access Self Test. Self Test is also accessible from the TEST MODE screen - see page 16 for more details about Self Test.

Erase/Default Oven Settings

⚠ CAUTION: Settings cannot be retrieved once an erase option is confirmed.

Press the R5 soft key to access the "Erase" screen. From the "Erase" screen,

- Press the L2 soft key to erase counters and fault logs.
- Press the R2 soft key to erase counters, fault logs, menu settings, temperature settings, serial number, date, and time. Doing so will also default all oven options (page 14 for more detail) to OFF, with the exception of "load menu."

Loading a Menu

From screen 2 of the INFO MODE, press the R1 soft key to access the "Load Menu" screen (Figure 19).

NOTE: This feature can be turned on or off via the "Options" screen (page 14).

To load a menu to the oven,

1. Insert the source (smart card or USB - see Figure 21, page 18).
2. Press the L1 soft key to load from a smart card, or the L4 soft key to load from USB* (Figure 19).
3. Verify the oven beeps and reads "FINISHED" (Figure 20).

* NOTE: To successfully load a menu from USB:

- The menu file must be a binary (.BIN) file
- The menu file name must be MENUDATA.BIN
- The menu file must exist in a top-level folder, i.e., the folder cannot be a sub-folder of any other folder on the USB device.
- The folder name must be TC_MENUS

To save a copy of a menu from the oven,

1. Insert the source (smart card or USB - see Figure 21, page 18).
2. Press the L2 soft key to save to a smart card or the L5 soft key to save to USB** (Figure 19).
3. Verify the oven beeps and reads "FINISHED".

** NOTE: To successfully save a menu to USB:

- The USB device must contain a top-level folder titled TC_MENUS

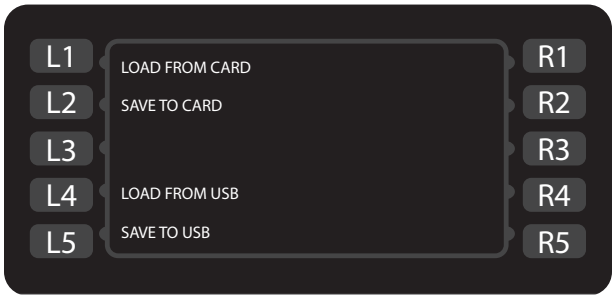


Figure 19: Load Menu Screen

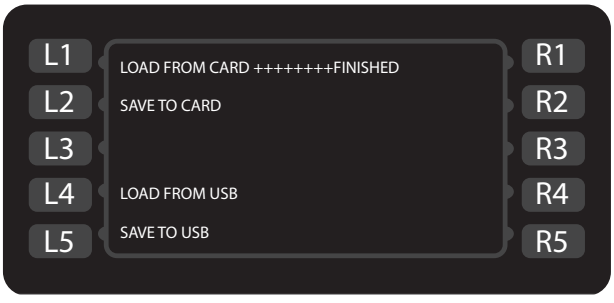


Figure 20: Loading...Finished

Updating the Software

From the Oven Off screen,

1. Insert the smart card (see Figure 21). If multiple smart cards are required, ensure the correct smart card is loaded first.
2. From the COOLING DOWN or OVEN OFF mode, press and hold the Info key until the oven resets (approximately 5 seconds).
3. When the oven beeps one long high tone, the load was successful. If a second card was provided, insert it.
4. When the oven restarts and the display turns on, the update is complete. Remove the smart card.

NOTE: If the update is unsuccessful, the display will remain off and the oven will beep one long, low tone. If this occurs, repeat the above procedure. If the update fails multiple times, a smart card may be damaged. Contact TurboChef to obtain a new smart card.

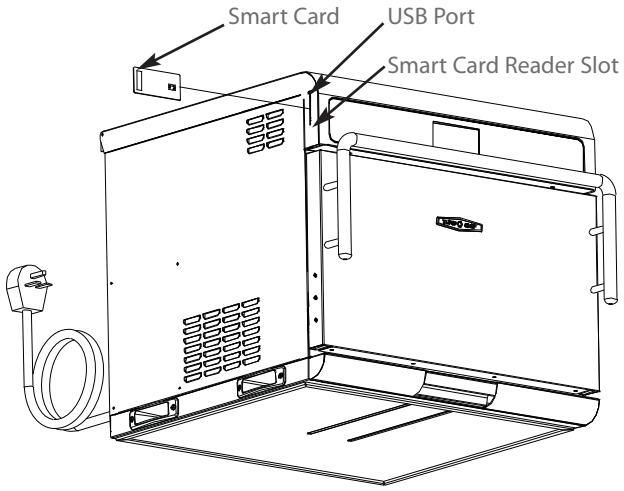


Figure 21: Inserting Smart Card/USB Device

Edit Mode

Overview of the Edit Mode

The EDIT MODE serves three main purposes:
1. To edit set temperatures.
2. To edit names of food groups and recipes.
3. To edit recipe settings.

To access the EDIT MODE,
1. Enable it from the "Options" screen (page 14).
2. Press the On/Off key to return the oven to the "Cooling Down" or "Off" screen.
3. Press the On/Off key again to enter EDIT MODE.

Single vs. Multiple Temperature Mode

The i5 Oven is capable of utilizing four unique set temperatures. By default, the oven operates in "Single Temperature" mode, in which all four temperatures are the same. By contrast, if more than one temperature is specified in the EDIT MODE, the oven will operate in "Multiple Temperature" mode.

The i5 Oven is capable of storing 200 recipes. If more than one temperature is desired, at least 50 recipe spots must be allocated to each unique temperature setting. Think of each temperature as a "block" of 5 food groups, or 50 recipes. The table below outlines differences between the two modes in more detail.

NOTE: Earlier i5 software versions store only two temperatures, each containing 100 food recipes.

	Single Temperature Mode	Multiple Temperature Mode
Edit Mode:	- Four temperatures available to edit (Figure 22, page 20). - Adjacent soft key to access recipes associated with temperatures (Figure 22, page 20). - When in "group select" (Figure 23, page 20), all 200 recipes will be available to edit (because all temperature settings are identical). - Temperature displayed adjacent to each "block" of five food groups (Figure 23, page 20).	- Same as single temperature mode. - Same as single temperature mode. - When in "group select" (Figure 23, page 20), only recipes associated with the selected temperature will be available to edit. (NOTE: if additional temperature settings are identical to the one that was selected, the associated recipes for those temperature settings will also be available to edit.) - Same as single temperature mode.
Cook Mode:	- No temperature selection screen. The oven automatically warms up when the On/Off key is pressed (Figure 7.3, page 10).	- When the oven is turned on, select a temperature before warming up (Figure 7.2, page 10).
Number of Recipes Available to Cook:	- 200 (all)	- If 2 unique temperatures: 100/100 or 150/50 - If 3 unique temperatures: 100/50/50 - If 4 unique temperatures: 50/50/50/50

Changing Set Temperatures

If a menu was loaded via smart card or USB (page 17), the temperatures are already set - they need not be changed. The set temperature should never be changed during normal operation.

Changing the set temperatures is not advised to compensate for over-cooking or under-cooking situations. Rather, consult your authorized distributor or TurboChef Customer Service if recipe settings are not cooking as desired.

To change a set temperature,

1. Place the oven in EDIT MODE (see page 14).
2. Select the temperature to change by pressing the adjacent soft key (Figure 22).
3. Using the number keys, enter the new set temperature.
4. Press the Enter key to confirm the change, or the Back/Stop key to cancel.

Changing Food Group/Recipe Name

To change a food group or recipe name,

1. Place the oven in EDIT MODE (see page 14).
2. Select a "block" of food groups by pressing the corresponding right-side soft key (Figure 22).

NOTE: Earlier i5 software versions store only two temperatures, each containing 2 food group "blocks."

3. Select the group that contains the recipe(s) you want to edit (Figure 23).
4. Select a recipe to edit (Figure 24).
5. From the "Recipe Edit" screen (Figure 25), edit the food group name:
   - Use the numeric keypad to change a character.
   - Press the R1 soft key to advance to the next character.
   - Press the L1 soft key to return to the previous character.
   - Press the R3 soft key to save changes.
6. Edit the recipe name:
   - Press the Down key to move to the "Recipe Name" field.
   - Use the instructions provided in step 5 to edit the recipe name.

Figure 22: Temperature Edit Screen

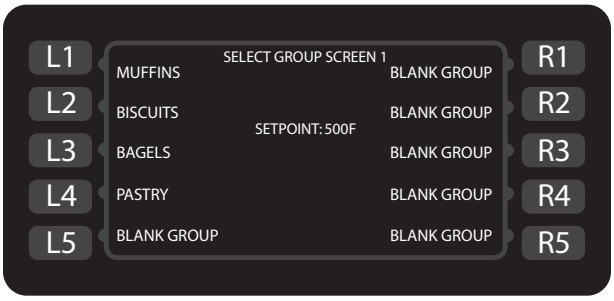


Figure 23: Select Food Group

Figure 24: Select Recipe to Edit

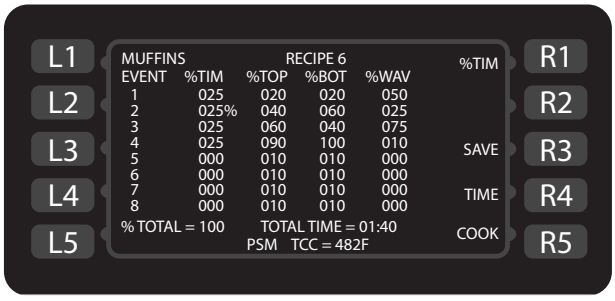


Figure 25: Recipe Edit Screen

Changing Recipe Settings

Recipe settings consist of the following:
- Up to eight "events" or stages of the cook cycle.
- Cook time.

To change recipe settings,
1. Place the oven in EDIT MODE (see page 14).
2. Access the "Food Group" screen (page 20).
3. Select a recipe to edit (Figure 24).
4. Use the Down key to move the cursor to the desired "Event Setting" field (Figure 25).

NOTE: To help make navigation easier, the currently-selected field will be displayed in the top-right corner of the display. In Figure 25, the cursor is in the %TIM column.

5. Use the number keys to adjust event settings:
   - % Time (0-100% in 1% increments). The sum of the percentages across eight events must equal 100.
   - % Top Blower (10-100% in 10% incr.)
   - % Bottom Blower (10-100% in 10% incr.)
   - % Microwave (0-100% in 10% incr.)
6. Use the Down key to move the cursor to the "Total Time" field.

NOTE: To help make navigation easier, the R4 "Time" soft key jumps the cursor to the total time field.

7. Use the number keys to adjust the cook time.
8. Press the R3 soft key to save changes.

NOTE: For the save to take effect, the cursor must be advanced past the field that was last edited.

9. If desired, press the R5 soft key to test-cook the new settings. In doing so, the oven may require additional warmup time.
10. When all editing is complete, return to the "Options" screen and turn off the EDIT MODE (see page 14). This will allow access into the regular cook mode.

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Oven Systems

Convection System

The convection system is designed to rapidly heat, clean, and recirculate air into the cook cavity.

This section contains information about the following components:

- Blower motor (bottom)
- Blower motor (top)
- Blower motor controller
- Heater element
- Jetplate (bottom)
- Jetplate (top)
- Stirrer motor and assembly

For information on accessing and removing parts, see the Appendix.

Blower Motor (Bottom)

The convection motor is a brushless AC switch reluctance type. Its top speed is 7100 RPM at 1 HP. The motor is controlled by a proprietary controller. The bottom blower spins clockwise.

The bottom blower motor can be tested in TEST MODE (see page 15).

Blower Motor (Top)

The convection motor is a brushless AC switch reluctance type. Its top speed is 7100 RPM at 1 HP. The motor is controlled by a proprietary controller. The top blower spins counterclockwise.

The top blower motor can be tested in TEST MODE (see page 15).

Blower Motor Controller (BMSC)

The motor controller is proprietary and will only operate the convection motors described above. The motor controller is controlled on command from the I/O control board and a 0-10VDC speed command from the I/O control board.
The blower motor controller can be tested in TEST MODE by testing the blower motors (see page 15). For additional troubleshooting, see page 39.

Heater Element

The main convection heater is a finned-style heater rated at 3000 watts at 208 VAC with a resistance of 14.4 Ohms. The convection heater is controlled by the K4/K5 solid state relay.

The heater element can be tested in TEST MODE (see page 15).

Jetplate (Bottom)

The bottom jetplate channels air that is generated from the bottom blower motor.

Jetplate (Top)

The top jetplate channels air that is generated from the top blower motor. This air passes through a stirrer before entering the cook cavity through the jetplate holes.

⚠ CAUTION: The top jetplate is ceramic. Be careful when removing or reinstalling it.

Stirrer Motor and Assembly

The stirrer is responsible for evenly distributing hot air and microwave that are launched from the top of the oven into the cook cavity. The stirrer is driven by a motor that remains on during a cook cycle or when the oven is in TEST MODE. The stirrer motor turns off when the cook cavity temperature recedes below 150°F (66°C).

The stirrer motor can be tested in TEST MODE (see page 15).

⚠ CAUTION: Be careful to not allow debris into the waveguides when servicing the stirrer assembly.

Troubleshooting Convection System

The following faults may occur in relation to the convection system:

- F1: Blower (see page 39)
- F2: Low Temp (see page 40)
- F6: EC Temp (see page 43)
- F7: Thermo (see page 43)
- F8: Heat Low (see page 44)

The following cooking performance issues may occur in relation to the convection system:

- Food not browning properly (see page 47)

Oven Door

This section contains information about the following components:

- Oven door
- Interlock switches
- Hinges and counter-balance assembly

This section also contains procedures for:

- Removing/reinstalling the oven door
- Adjusting the oven door
- Adjusting the oven door switches
- Measuring RF leakage for microwave safety

For information on accessing and removing parts, see the Appendix.

The proper fit and adjustment of the oven door is essential for safe and reliable oven operation.

The oven door assembly consists of a shunt plate, skin, and handle. Each of these items can be purchased independently.

Removing/Reinstalling the Oven Door

To remove or reinstall the oven door, follow the steps below. For illustrations, see page A-4.

1. Ensure the oven has cooled to 150°F (66°C).
2. Open the oven door to its full open position.
3. Locate and remove #8-32 screws (3 per side).
4. Carefully remove the oven door by pulling the door away from the oven. It will slide off the hinges and the hinge blocks will stay in place. See Figure A-1, page A-4.
5. To reinstall or fit a new door, carefully slide it back over the hinge blocks and replace the 6 #8-32 screws (3 each side).
6. Verify that the door is parallel to the oven frame. If it is not parallel, adjust the door per the instructions below.
7. From TEST MODE, check the status indicators "P" "S" and "M" to verify the switches engage (door closed) and disengage (door open) properly. If they do not, adjust the switches per the instructions on page 26.
8. Complete a MW leakage test (page 27).

Adjusting the Oven Door

⚠ WARNING: Procedure should be done while oven is hot. As a result, exercise extreme caution when adjusting the door.

1. Ensure the oven door is closed.
2. Remove the two 1/4-20 bolts securing the door hinge to the oven (Figure 26A, page 25).
3. Allow the oven to warm up to the set temperature. If more than one set temperature is present, select the highest.
4. If the oven will not warm up because the switches are misaligned as a result of the oven door, slide the switches or switch bracket accordingly until each switch is engaged.
5. Reference Figures 26B and 26C (page 25) to determine where to tap. If following Figure 26C, remove the primary, secondary, and monitor switches before adjusting the door.
6. Gently tap the oven door in the areas marked in Figures 26B or 26C until the door is parallel to the oven frame.
7. If the switches were removed, reinstall them.
8. From TEST MODE, check the status indicators "P" "S" and "M" to verify the switches open and close in the correct sequence: P, S, M when the door is open and M, S, P when the door is closed. If they do not, adjust the switches per the instructions on page 26.
9. Perform a MW Leak Test (page 27).

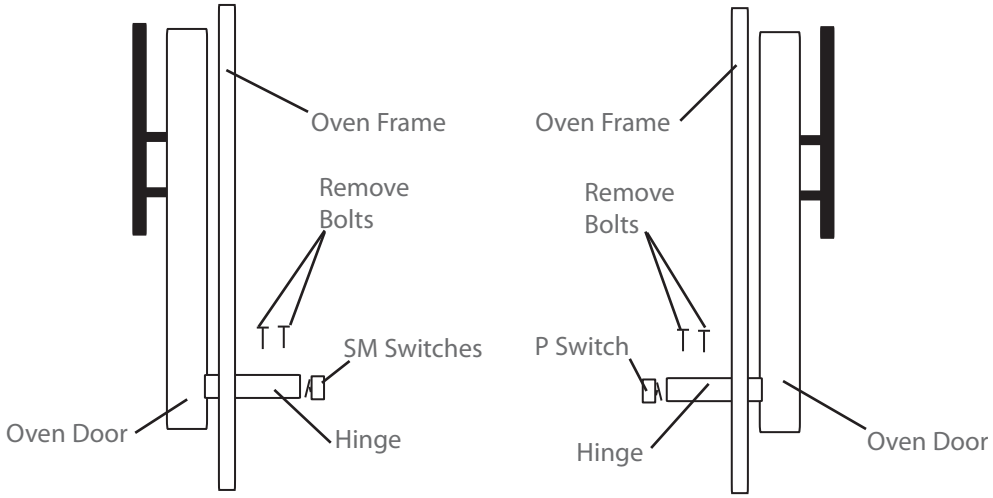


Figure 26A: Properly Adjusted Door - Side Views

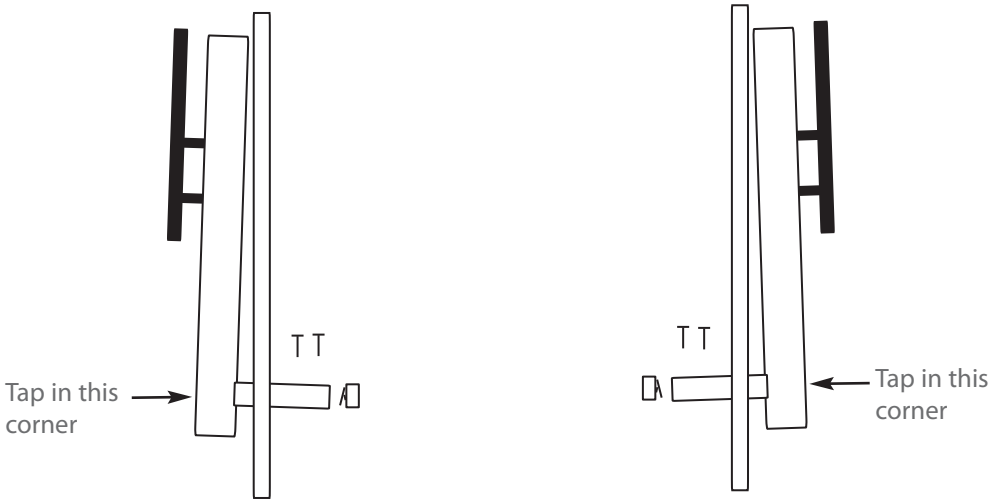


Figure 26B: Door Misaligned Variation 1 - Side Views

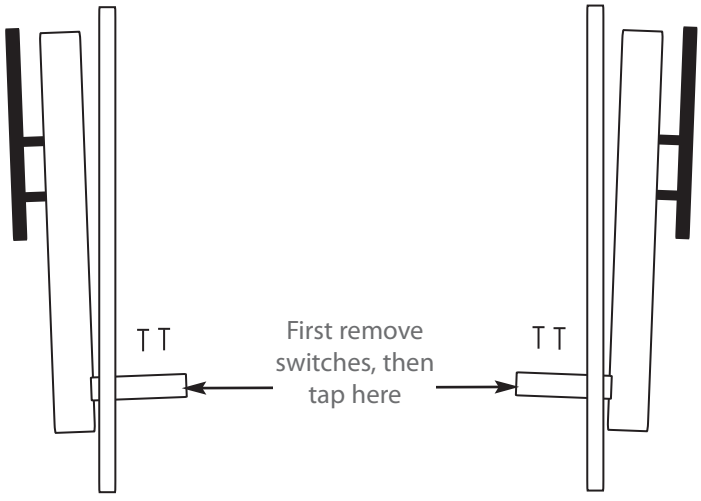


Figure 26C: Door Misaligned Variation 2 - Side Views

Interlock Switches

The primary, secondary, and monitor interlock switches engage and disengage in sequence to ensure a proper seal. When the door is opened, the switch sequence is P, S, M. Subsequently, the sequence is M, S, P when the door is closed.

Adjusting the Door Switches

⚠ WARNING: Procedure requires work while the oven is hot. As a result, exercise extreme caution when adjusting the door switches.

1. Ensure the oven door is closed.
2. Verify the oven door is not misaligned. If it is, align it (see procedure on page 24, illustrations on page 25.
3. If the door is properly aligned, loosen the hex screws on the switch bracket and slide the bracket accordingly until each switch is just engaged. If the bracket is properly positioned, but the switches are not, slide the switches until they just engage.
4. Allow the oven to warm up to the set temperature. If more than one set temperature is present, select the highest.
5. Once the oven warms to the set temperature, go to TEST MODE (page 15).
6. Check the status indicators "P" "S" and "M" to verify the switches open and close in the correct sequence: P, S, M when the door is open and M, S, P when the door is closed.
7. If necessary, repeat steps 3-6.
8. Perform a MW Leak Test (adjacent).

Hinges and Counter-Balance Assembly

The door hinges and counter-balance assembly work to ensure the door consistently opens and closes smoothly.

Adjusting the Counter-Balance Assembly

⚠ WARNING: Procedure requires work while the oven is hot. As a result, exercise extreme caution when adjusting the door switches.

NOTE: In Figure 27, some oven components have been removed for clarity. The adjustment procedure MUST be performed with the counter-balance and hinges installed.

1. Ensure the oven door is closed.
2. Remove both side panels.
3. Remove both switch bracket assemblies (one on each side of the oven). See Figure 27.
4. Remove the door hinge gussets from each side of the oven. See Figure 27.
5. On one side of the oven, loosen the screw as shown in Figure 27.
6. Slide the adjustment spacer (included with counter-balance assembly kit) under the counter-balance bracket. The thin side of the spacer should go between the screw and the bracket, and the notch should rest against the side of the bracket. See Figure 27.
7. Tighten the screw against the adjustment spacer so that the spacer cannot slide out.
8. Loosen the screw just enough to allow the spacer to slide out.
9. Repeat steps 5-8 for the other side of the oven.
10. Reinstall the door hinge gussets and ensure the bolts are snug.
11. Reinstall the switch bracket assemblies, verifying that the levers on the switches are in the closed position (i.e., snug against the actuator).
12. Warm up the oven, allowing the additional 8-minute "soak" to achieve thermal equilibrium in the cook cavity.
13. If necessary, adjust the oven door by ensuring it is parallel to the frame. See page 24.
14. Adjust the door switches to ensure the proper sequence (adjacent).
15. Test for microwave leakage (page 27).

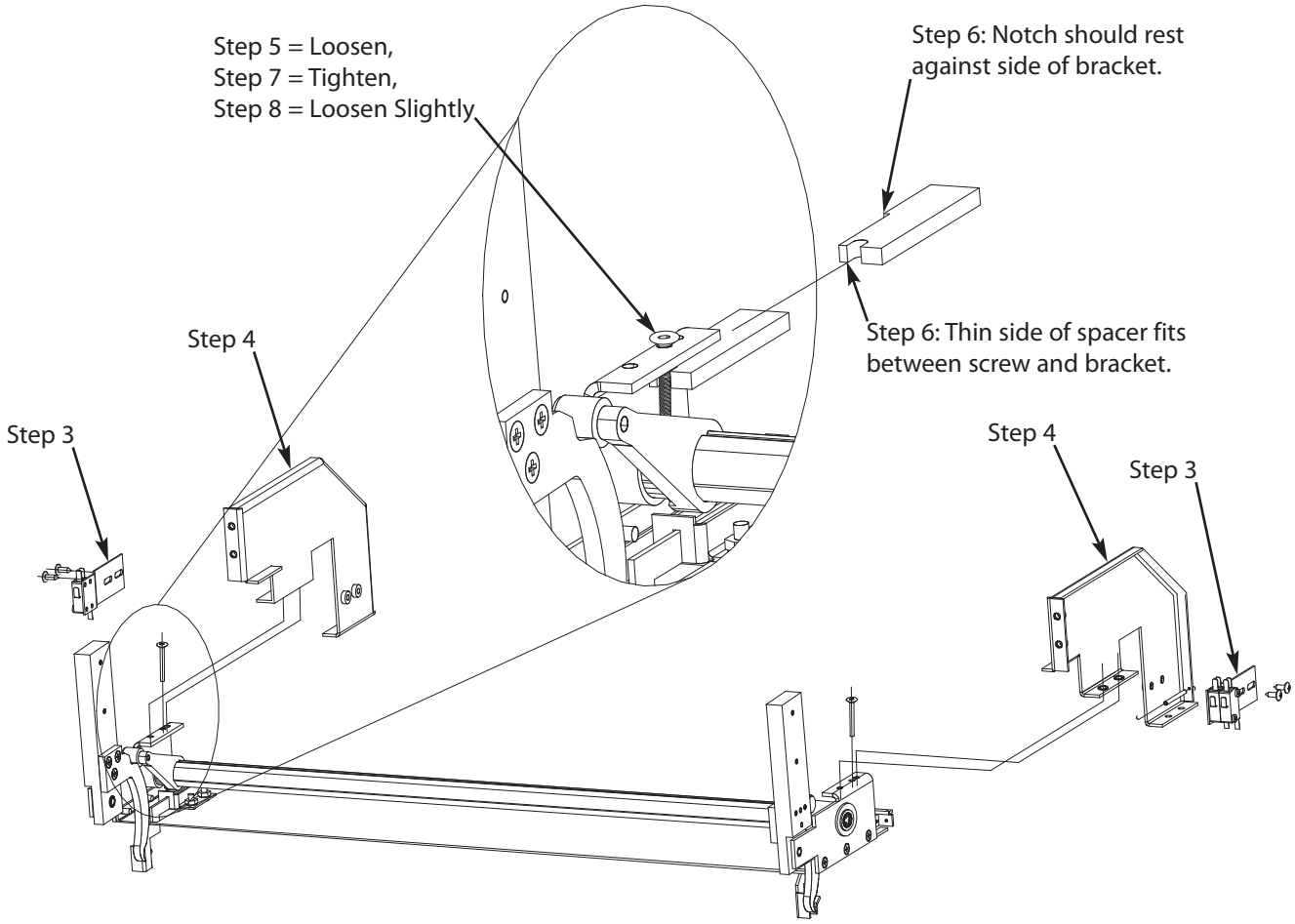

Step 5 = Loosen,
Step 7 = Tighten,
Step 8 = Loosen Slightly
Step 6: Notch should rest against side of bracket.
Step 6: Thin side of spacer fits between screw and bracket.
Step 4
Step 3
Step 4
Step 3

Figure 27: Counter Balance Adjustment

Measuring RF Leakage for Microwave Safety

⚠ WARNING: Procedure requires work while the oven and water loads are hot. As a result, exercise extreme caution when testing.

An RF (microwave) leakage test must be performed at the conclusion of the following service tasks:

- Door removal, replacement and/or adjustment
- Wave guide removal and /or replacement
- Magnetron removal and/or replacement
- Door gasket

⚠ WARNING: If the unit fails the microwave leakage test (leakage greater than 5mW/cm^2), the oven must be taken out of service immediately until the defect is corrected. In addition, the CDRH Regulation 21 Subpart C, 1002.20 requires that leakage readings of over 5mW/cm^2 must be reported to the manufacturer.

To measure RF leakage,

1. Place the oven in WARMING UP MODE (page 11) and allow it to warm up to the set temperature (approximately 15 minutes if the oven starts cold).
2. Once the oven has warmed up, place the oven in TEST MODE (see page 15). From TEST MODE, select "MFG Mode."
3. From the Manufacturing Mode screen, select "MW Leak Test" and follow the instructions on the screen (also detailed in following steps).
4. Place a water load into the cook cavity. Water load must conform to the following specifications:
   - Volume: 275 ml ± 15 ml
   - Temperature: 68°F ± 9°F (20°C ± 5°C)
   - Vessel: Low form, 600 ml beaker with an inside diameter of approximately 3.35" (85 mm) and made of Pyrex or equivalent.

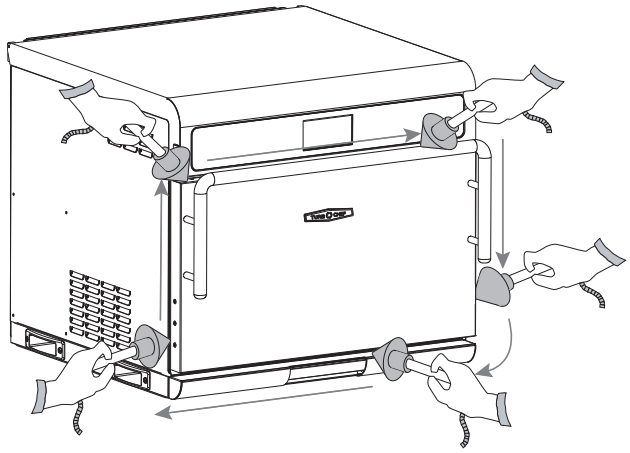


Figure 28: Survey Meter Placement

5. Close the oven door and press the Enter key. The microwave system will turn on.
6. Position the microwave survey meter as shown in Figure 28, above.
7. Measure microwave emission around the door, moving the meter sensor at 0.5 inches/second. As microwave leakage is observed moving the sensor at 0.5 inches/second, note any meter spike areas that come close to 5mW/cm^2 for later re-measurement.
8. Replace the water load every 60 seconds until the test is completed, and also after scanning the door.
9. Close the oven door and return the meter probe to any "meter spike" areas and allow the probe to remain in the "spike" area for 17 seconds. Note the highest reading obtained.

NOTE: There may be several places on the door where this procedure needs to be done. If so, start out with a fresh water load each time a new area is measured, or if measurement of an area takes longer than 60 seconds.

10. After each test is complete, open the oven door and dispose of the hot water.

Troubleshooting

The following faults may occur in relation to the oven door:

- F4: Monitor (see page 42)

The following issues may occur in relation to the oven door:

- “Cook Door Open” message when door is closed (see page 45).

Microwave System

The i5 oven employs two independent microwave systems (left and right). In the case of an over-current situation relative to the left system, the F3 fuse will blow. In the case of an over-current situation relative to the right system, the F4 fuse will blow.

This section contains information about the following components:

- Capacitors
- Filament Transformers
- High-Voltage Diodes
- High-Voltage Transformers
- Magnetrons
- Stirrer Motor and Assembly
- Wave Guides

This section also contains procedures for:

- Testing a capacitor
- Wiring the filament transformers
- Testing a filament transformer
- Testing a high-voltage diode
- Wiring the high-voltage transformers
- Testing a high-voltage transformer
- Testing a magnetron for an open/shorted filament

For information on accessing and removing parts, see the Appendix.

Capacitors

- Capacitor rating is 0.91uF, 2500 VDC for all 60 Hz installations (except Japan).
- Capacitor rating is 1.15uF, 2500 VDC for all 50 Hz installations.
- Capacitor rating is 0.85uF, 2500 VDC for 60 Hz Japan installations.

Testing a Capacitor

⚠ DANGER: Never attempt any measurement of the capacitors while they are enabled. Lethal voltage will be present. Measure only in compliance with these procedures.

1. Disconnect the oven from the power source.
2. Fully discharge the capacitor.
3. Isolate the capacitor from the circuit.
4. Check for an open or shorted capacitor by placing ohmmeter leads between the capacitor terminals:
   - Inconsistent readings = capacitor OK
   - Constant infinite resistance = capacitor open
   - Constant very low resistance = capacitor shorted
5. If the capacitor is not open or shorted, set the meter to measure capacitance and again place the leads between the capacitor terminals. The meter reading should equal the label value, plus or minus 10%. If not, replace the capacitor.

Filament Transformers

For better operation and reliability, the oven uses separate transformers in order to preheat the magnetron filament.

The control energizes the filament transformers for approximately five seconds prior to energizing the Microwave Circuit via the high-voltage transformers. When in operation, the filament transformers supply approximately 3.15 VAC at 10 amps to each magnetron filament. The filament transformers are controlled via the K1 relay.

Wiring the Filament Transformers

⚠ DANGER: Never attempt to measure the secondary voltage values of the filament transformers when they are enabled. Lethal voltage will be present.

The installation of filament transformers is straightforward. Filament transformers are wired in-phase and in-line. Refer to the schematic on page 51, detailing the proper wiring.

To verify correct wiring (North America), measure the voltages between terminals 1 & 2 and 1 & 3 on FT1 and FT2. The voltages must be 208 and 240 VAC respectively.

NOTE: The terminals with the orange dot or the orange wire always go to Terminal 3 on US models.

To verify correct wiring (International), measure the voltage between the taps on FT1 and FT2. The voltage must be 220 VAC (Latin America), 200 VAC (Japan), or 230 VAC (International).

High-Voltage Transformers

High-voltage transformers are a ferro-resonant design which limits fault currents and minimizes magnetron power changes due to input voltage changes. The high-voltage transformer supplies the high voltage for the Voltage Doubler Circuit. They are controlled via the K2 relay.

Wiring the High-Voltage Transformers

⚠ DANGER: Never attempt to wire or measure the secondary voltage values of the high-voltage transformers with the high-voltage transformers enabled. Lethal voltage will be present.

The proper reinstallation of a high-voltage transformer is critical. Upon removing a high-voltage transformer, make sure to note where each wire was installed. Refer to the oven schematic (page 51) detailing the proper wiring.

As shown in the schematic, transformers are installed mirror opposite and wired 180º out-of-phase. It is essential for longevity that the high-voltage transformers remain 180º out-of-phase. This can be checked by placing a volt meter across terminals T1-1 and T2-1 (primary voltage).

With the microwave system energized, the volt meter will read the incoming voltage (different readings for different electrical installations). If the meter reads 0 VAC, the high-voltage transformers are most likely wired in-phase. As a last check, energize the microwave system and verify the voltages between the taps on each high-voltage transformer.

The wiring issue must be corrected prior to returning the oven to service, as the voltages must be:

- NORTH AMERICA: 208 VAC between 1 & 2 and 240 between 1 & 3.
- LATIN AMERICA: 220 VAC
- JAPAN: 200 VAC
- INTERNATIONAL: 230 VAC

NOTE: The terminals with the orange dot/orange wire always go to terminal 3 on USA models.

Testing a Filament or HV Transformer

⚠ DANGER: Never attempt to measure the secondary voltage values of the transformers when they are enabled. Lethal voltage will be present.

1. Disconnect the AC power source and discharge the high-voltage capacitors.
2. Disconnect all the wires in question going to the transformer.
3. Use an ohmmeter to check the impedance of the primary and secondary winding. Refer to the adjacent resistance table to determine if the transformer is OK. If the resistance is different then the table indicates, replace the transformer.

High-Voltage Diodes

The high-voltage diode (Figure 29) is assembled by connecting several 1000-1500 volt semi-conductor diodes in a series to increase the reverse voltage capability. In the circuit, the high-voltage diode conducts to prevent the filament voltage from becoming positive, thus as the high-voltage winding of the transformer goes to 2400 VPK, the high-voltage capacitor is charged to 2400 volts.

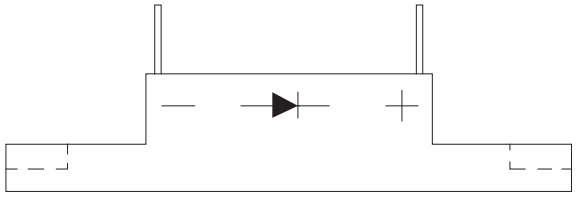


Figure 29: High Voltage Diode

High Voltage Transformers	Primary Voltage, Frequency, Taps, and Resistance	Secondary Taps and Resistance
NGC-3062-1	208 VAC, 60 Hz, 1 & 2, 0.819–1.001 Ω 240 VAC, 60 Hz, 1 & 3, 0.972–1.188 Ω	4, Ground, 53.60–65.52 Ω
NGC-3062-2	230 VAC, 50 Hz, 1 & 2, 0.972–1.188 Ω	3, Ground, 57.52–70.30 Ω
NGC-3062-3	200 VAC, 50/60 Hz, 1 & 2, 0.784–0.958 Ω	3, Ground, 55.75–68.13 Ω
Filament Transformers	**Primary Voltage, Frequency, Taps, and Resistance**	**Secondary Taps and Resistance**
NGC-3061-1	208 VAC, 60 Hz, 1 & 2, 17.49–21.37 Ω 240 VAC, 60 Hz, 1 & 3, 20.61–25.19 Ω	4, 5, very low resistance - if reading is open, transformer has failed.
NGC-3061-2	230 VAC, 50 Hz, 1 & 2, 18.99–23.21 Ω	3, 4, very low resistance - if reading is open, transformer has failed.
NGC-3061-3	200 VAC, 50/60 Hz, 1 & 2, 15.70–19.18 Ω	3, 4, very low resistance - if reading is open, transformer has failed.

High Voltage and Filament Transformer Resistance Table

When the high-voltage winding starts to go toward negative, the high-voltage diode becomes non-conducting with the charged high-voltage capacitor in series with the high-voltage winding. When the transformer gets to its negative peak of -2400 VPK, the voltage applied to the filament is negative 4500 volts. The high-voltage diodes are rated at 16 kVDC.

Testing a High-Voltage Diode

⚠ DANGER: Never attempt to measure high voltage directly. Death or serious injury could result.

1. Disconnect the oven from the power source.
2. Fully discharge the capacitors.
3. Connect the voltage meter in series with diode.
4. Using a multimeter set to DC voltage, connect one meter lead to one side of a 9-volt battery and the other lead to one side of the diode.
5. Connect the other side of the 9-volt battery to the other side of the diode. DC voltage should only be present on the meter in one direction.
6. Switch the meter leads on the diode, which will cause the opposite reading to be visible. Depending on the voltage of the battery, voltage between 5-7 VDC should be present in only one direction and 0-0.1 VDC in the other direction.

Magnetrons

Figure 30. Magnetrons supply the RF energy at 2.45 GHz and begin to oscillate when they are supplied with approximately 4.1 kVDC at approximately .350 mA. During operation each magnetron will output a nominal 1 kW of power.

If replacement is required, conduct a microwave leakage test (page 27) after installation of new magnetron.

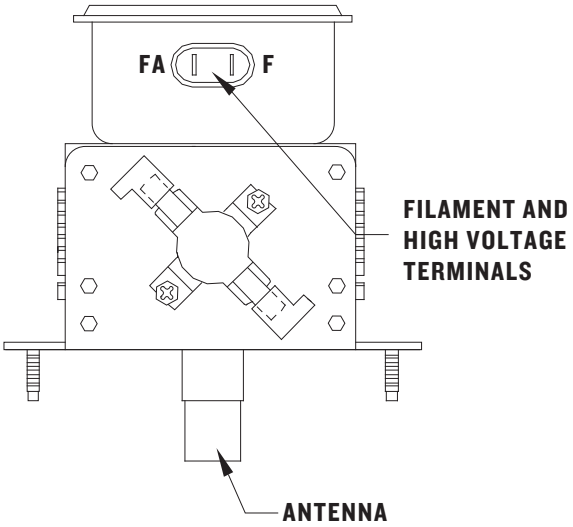


Figure 30: Magnetron

Testing a Magnetron for an Open/Shorted Filament

⚠ DANGER: The only safe way to test a magnetron is by a resistance test of its filament. Never attempt to measure the magnetron using any other method while the microwave system is on. Death or serious injury could occur.

1. Disconnect the AC power source and discharge the high-voltage capacitors.
2. Isolate the magnetron from the circuit by removing the wires from the F and FA terminals. Figure 30.
3. An ohmmeter connected between the filament terminals (F, FA) should indicate a reading of less than 1 ohm. Figure 30.
4. A continuity check between either filament terminal and the magnetron chassis should indicate an infinite resistance (open).

⚠ CAUTION: Be careful to not allow debris into the wave guides when servicing the magnetrons.

Stirrer Motor and Assembly

The stirrer is responsible for evenly distributing hot air and microwaves that are launched from the top of the oven into the cook cavity. The stirrer is driven by a 3.6 RPM motor, which remains on during a cook cycle or when the oven is in TEST MODE.

The stirrer motor can be tested in TEST MODE (see page 15).

⚠ CAUTION: Be careful to not allow debris into the waveguides when servicing the stirrer assembly.

Wave Guides

The wave guides channel microwave into the cook cavity. If debris or contamination gets into the wave guides, the life of the magnetrons may be shortened. Be careful to not allow debris into the waveguides when servicing the magnetrons or stirrer assembly.

Troubleshooting

The following faults may occur in relation to the microwave system:

- F3: Magnetron Current Low (see page 41)
- F5: Magnetron Over Temperature (see page 42)

The following issues may occur in relation to the microwave system:

- Electrical component failure (blank or scrambled display, damaged control board, etc.)
- Food not cooking properly

Control System

This section contains information about the following components:

- Control board
- Display
- Electrical compartment cooling fans
- Electrical compartment cooling fan thermostat
- Electrical compartment thermocouple
- EMI Filter
- Fuses
- High-limit thermostat
- Keypad
- Magnetron cooling fans
- Magnetron thermostats
- Power Supply
- Relay (K1 - Filament)
- Relay (K2 - Anode)
- Relay (K3 - Monitor)
- Relay (K6 - Voltage)
- Relay (K7 - Mag fan)
- Relay (K8 - Stirrer)
- RTD
- Smart card reader
- Solid state relay (K4/K5 - Heater)
- Speaker
- USB port
- Voltage sensor
- Wire harness

Control Board

The control board controls each electrical component of the oven. See page 51 for a schematic. 24 VDC can be measured at pin 2 of the J7 connector.

Display

The vacuum fluorescent display is the primary user interface.

Electrical Compartment Cooling Fans

The cooling fans (located in the rear of the oven) are actuated by the cooling fan thermostat when the temperature of the electrical compartment reaches 120ºF (49ºC).

Electrical Compartment Cooling Fan Thermostat

The cooling fan thermostat actuates the rear cooling fans when the electrical compartment temperature reaches 120ºF (49ºC).

Electrical Compartment Thermocouple

The electrical compartment thermocouple is a type "K" thermocouple, which measures the temperature of the electrical compartment. If the temperature of the electrical compartment is above 158ºF (70ºC), an F6: EC TEMP" fault will display. The control board checks the temperature of the electrical compartment once every 60 seconds.

EMI Filter

The EMI filter helps suppress the amount of RF interference emitted by the oven.

Fuses

All four fuses are 12-amp, class CC.

The F1 fuse (via blue wire) or F2 fuse (via brown wire) is designed to blow in case of an over-current situation relative to the following components:

- BMSC motor controller
- Electrical compartment cooling fans
- Filament transformers
- Magnetron cooling fans
- Power supply
- Stirrer motor

The F3 fuse is designed to blow in case of an over-current situation relative to the left microwave system (magnetron, high-voltage transformer, diode, capacitor).

The F4 fuse is designed to blow in case of an over-current situation relative to the right microwave system (magnetron, high-voltage transformer, diode, capacitor).

High Limit Thermostat

The high limit thermostat is a 250 VAC, 3-pole, manual-reset thermostat with a trip point of 572°F (300°C). The thermostat interrupts power to the main convection heater in the event of an abnormal condition.

Reset the high-limit thermostat by pressing the reset button (Figure 31).

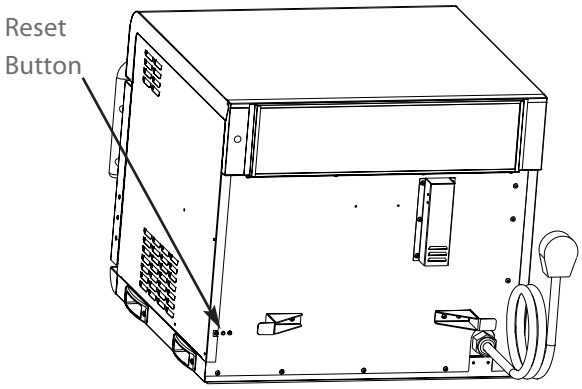


Figure 31: High-Limit Reset Button

Keypad

The keypad is a 7 x 10 matrix membrane switch. For details on key functions, see page 9.

Magnetron Cooling Fans

The magnetron cooling fans supply air to the magnetrons, and are actuated by the K7 relay. They operate at:

- 208/240 VAC (60 Hz installations with voltage sensing)
- 220 VAC (60 Hz installations with no voltage sensing)
- 230 VAC (50 Hz installations)
- 200 VAC (Japan installations)

Magnetron Thermostats

The magnetron thermostats are “open-on rise.” They are designed to open at 212°F (100°C), which triggers an F5 fault.

NOTE: The magnetron thermostats are wired in series. If one opens, the control will switch off both microwave systems until the open thermostat closes. The thermostats are self-resetting.

Power Supply

The power supply outputs 24 VDC at 40 watts to the control board and relays.

Relay - K1 Filament

The K1 relay is a 240 VAC, 30 amp, double-pole, double-throw, 24 VDC relay coil. It switches power to the magnetron filament transformers.

Relay - K2 Anode

The K2 relay is a 240 VAC, 30 amp, double-pole, double-throw, 24 VDC relay coil. It switches power to the magnetron high-voltage transformers.

Relay - K3 Monitor

The K3 relay is a 240 VAC, 30 amp, double-pole, double-throw, 24 VDC relay coil. It shorts L1 and L2 if the monitor switch opens before the primary or secondary switches.

Relay - K6 Voltage

The K6 relay is a 240 VAC, 30 amp, three-pole, double-throw, 24 VDC relay coil. Applicable in North America only, it switches between 208 and 240 VAC on the high-voltage transformer and filament transformer taps (depending on incoming voltage).

Relay - K7 Magnetron Cooling Fan

The K7 relay is a 240 VAC, 30 amp, double-pole, double-throw, 24 VDC relay coil. It switches power to the magnetron cooling fans when the magnetron filaments are actuated. Power is switched off after 4 minutes, 15 seconds.

NOTE: The 4:15 timer starts over each time the magnetron filaments are actuated.

Relay - K8 Stirrer Motor

The K8 relay is a 240 VAC, 30 amp, double-pole, double-throw, 24 VDC relay coil. It switches power to the stirrer motor.

RTD

The RTD measures the temperature of the heater element. If the display reads "999°F/C", the RTD is open, resulting in an F7 fault. See page 43 for troubleshooting.

Smart Card Reader

The smart card reader allows the oven operator to load a menu/software updates from a smart card. A menu that already exists in the oven can also be saved to a smart card. For instructions, see page 17.

Solid State Relay - K4/K5 Heater

The solid state relay is a 240 VAC, dual 40-amp relay. K4 (right) switches power to heater 1. K5 (left) switches power to heater 2.

Speaker

The speaker provides audible feedback to the oven operator whenever a key is pressed or a task (such as a cook cycle) is completed, etc.

USB Port

The USB port allows the oven operator to load a menu/software updates from a USB drive. A menu that already exists in the oven can also be saved to a USB drive. For instructions, see page 17.

Voltage Sensor

For North America oven models, the oven will detect 208 or 240 incoming voltage.

The initial voltage selection is typically completed before the oven is used by the customer. However, if incoming voltage for the store is different than the preset voltage, the operator will be required to select either 208 or 240 after pressing the On/Off key to turn on the oven. The correct voltage will be enlarged on the screen, identifying which option to select.

Wire Harness

The wire harness distributes power to the oven's electrical components. See page 51 for a schematic.

Troubleshooting

Potentially, any fault may occur in relation to the control system. See section "Fault Code Troubleshooting," pages 39-44.

Potentially, any one of the issues diagnosed in the section "Non-Fault Code Troubleshooting" may occur in relation to the control system. See section "Non-Fault Code Troubleshooting," pages 45-49.

Filtering System

This section contains information about the following components:

- Catalytic converter
- Drain pan
- Air Filter
- Vent catalyst

Catalytic Converter

The catalytic converter, a VOC type catalyst, is located behind the inside cook cavity wall and is responsible for cleaning the recirculating airflow. The catalyst functions by substantially lowering the combustion temperature of grease entrained in the air path to approximately the same temperature of the airflow, thus the grease burns and breaks down into CO_2 and H_2O as it passes through the catalytic converter. The catalyst will operate most efficiently at temperatures above 475ºF (246ºC).

The catalyst material is very sensitive to certain chemical compounds. Irreversible damage can occur if the catalyst is exposed to cleaning chemicals containing phosphates, NaOH, silicates, Na and Potassium Salts. These chemicals are found in most commercial degreasers and cleaners; therefore, only TurboChef® Oven Cleaner should be used.

⚠ CAUTION: Clean the catalytic converter with TurboChef® Oven Cleaner and rinse thoroughly with distilled water. Let the catalytic converter air dry before reinstalling. If TurboChef Oven Cleaner is not available, do not use a substitute. Use distilled water only.

Drain Pan

The drain pan collects debris as it is flushed through the bottom of the cook cavity.

Air Filter

The filter is located on the back of the oven. It helps prevent debris from getting into the electrical compartment.

Vent Catalyst

In addition to the main catalytic converter, the i5 oven contains an additional catalyst in the vent tube path. This catalyst further assists in the breakdown of grease and particulate matter before the excess air enters the atmosphere.

Troubleshooting

The following issues may occur in relation to the filtering system:

- Fire in the cook cavity (if catalytic converter is clogged and oven is not regularly cleaned).
- Electrical component failure (if filter is not present or is clogged).
- Undesirable flavor transfer.
- Undesirable odor emissions.

Troubleshooting

Overview of Troubleshooting

This section contains information on the following:

- Fault code descriptions
- Fault code troubleshooting
- Non-fault code troubleshooting

For information on accessing TEST MODE, see page 15. For information and illustrations on replacing components, see the appendix.

Fault Code Descriptions

For instructions on viewing the fault counter, see page 13.

F1: Blower Running Status Bad

This fault is displayed when the motor controller indicates no running status.

The motors and motor controller are monitored continuously in all modes with special handling in the TEST MODE (see page 15). If a fault is detected, the control will terminate a cook cycle and display "F1: Blower."

Upon turning on the oven, the control will attempt to restart the motors. If the restart of both motors is successful, the fault code will be cleared from the display. The fault is also cleared from the display at the onset of cooking or when a blower motor is tested in TEST MODE.

F2: Cook Temperature Low

This fault is displayed if the cook cavity temperature is more than 84°F (47°C) below the set temperature after five seconds into a cook cycle.

The fault is cleared from the display at the onset of cooking if the cook cavity temperature is within 84°F (47°C) of the set temperature or when the heater is tested in TEST MODE (see page 15).

F3: Magnetron Current Low

This fault is displayed when the current transformer (CT) on the I/O control board detects less than 10 amps. The fault is monitored when the microwave is on during a cook cycle or in TEST MODE.

The fault is cleared from the display at the onset of a cook cycle if the CT detects 10 amps or when the magnetrons are successfully energized in TEST MODE.

F4: Door Monitor Defective

This fault is displayed when the control detects that the monitor interlock switch unlatches before the primary or secondary interlock switches. In addition, this fault will blow the F3 and F4 fuse if the microwave high voltage system is energized when the fault occurs. The fault is cleared from the display when the oven is powered off and then back on.

NOTE: Door interlock switches are in parallel. See the oven schematic, page 51. The fault is monitored during a cook cycle and in TEST MODE when the microwave is on.

F5: Magnetron Over Temperature

This fault is displayed when either magnetron thermostat reaches 212°F (100°C).

The thermostats will reset automatically, and are wired in series. The fault is cleared from the display at the onset of a cook cycle if the thermostat is closed or when the magnetrons are successfully tested in TEST MODE.

F6: Electrical Compartment Temperature High

This fault is displayed when the EC thermocouple exceeds 158°F (70°C). The EC temperature is monitored once per minute.

The fault is cleared from the display if on the next check, the EC thermocouple temperature is below the indicated limit.

F7: RTD Open

This fault is displayed when the control detects that the RTD is "open." The display will show a reading of "999°F/C," indicating the RTD is open.

The fault is cleared when the control detects continuity.

F8: Heat Low

This fault displays during WARMING UP or TEST MODE if the cook cavity temperature fails to rise at least 14°F (7°C) within a given 30 seconds.

Fault Code and Description	When Active				Refer to...
	Warmup	Idle	Cooking	Test Mode	
F1: Blower Running Status Bad	✔	✔	✔	✔	Page 39
F2: Cook Temperature Low			✔		Page 40
F3: Magnetron Current Low			✔	✔	Page 41
F4: Door Monitor Defective			✔	✔	Page 42
F5: Magnetron Over Temperature			✔	✔	Page 42
F6: EC Temperature High	✔	✔	✔	✔	Page 43
F7: RTD Open	✔	✔	✔	✔	Page 43
F8: Heat Low	✔			✔	Page 44

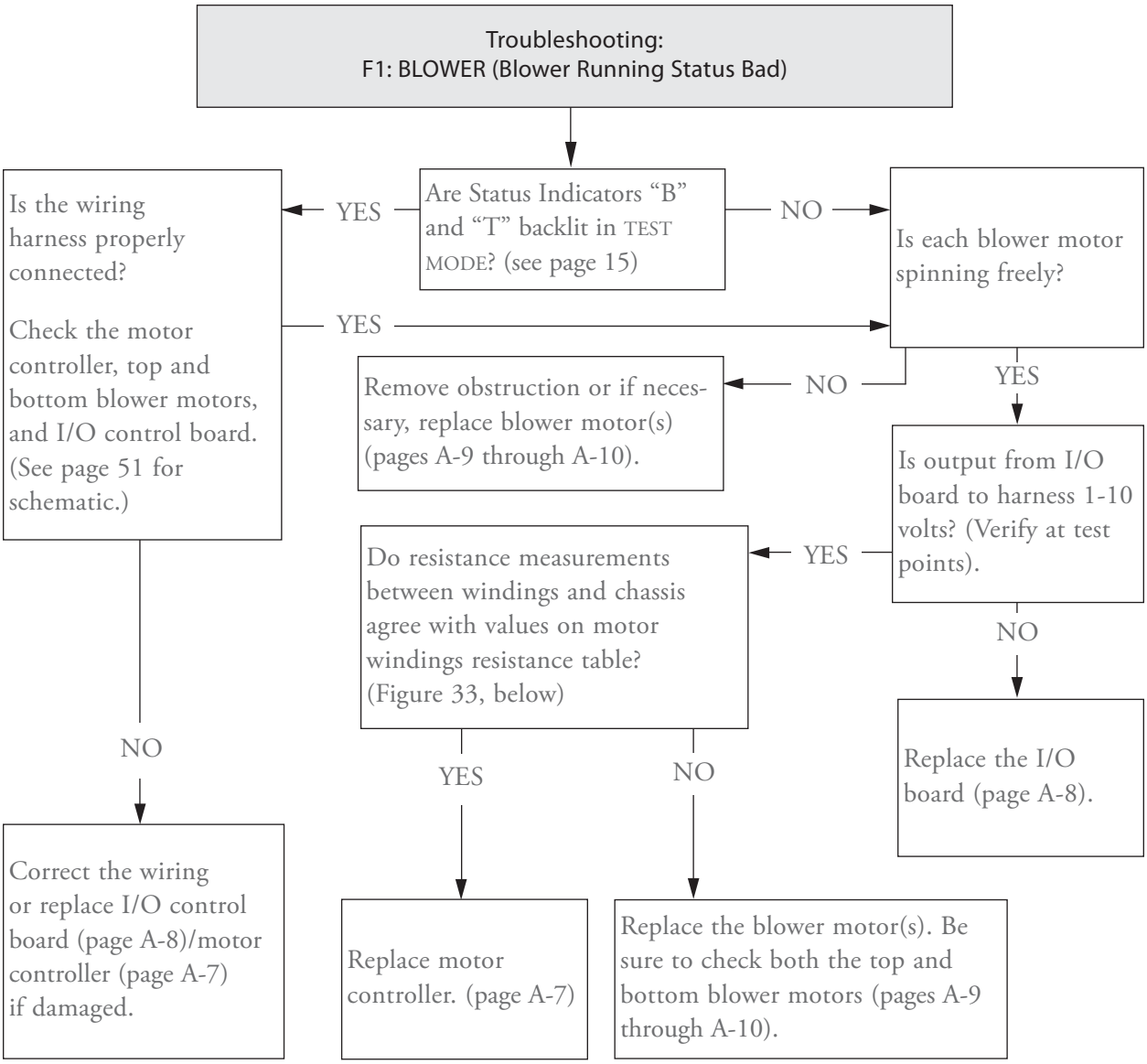
Figure 32: Fault Code Table

Fault codes are listed in order of hierarchy. For example, if during cooking the oven experiences an F1 and F2 fault, the oven will report only the F1 fault because the software will halt all actions upon discovering the F1 fault.

Fault codes F1 - F5 and F7 will terminate a cook cycle upon discovery.

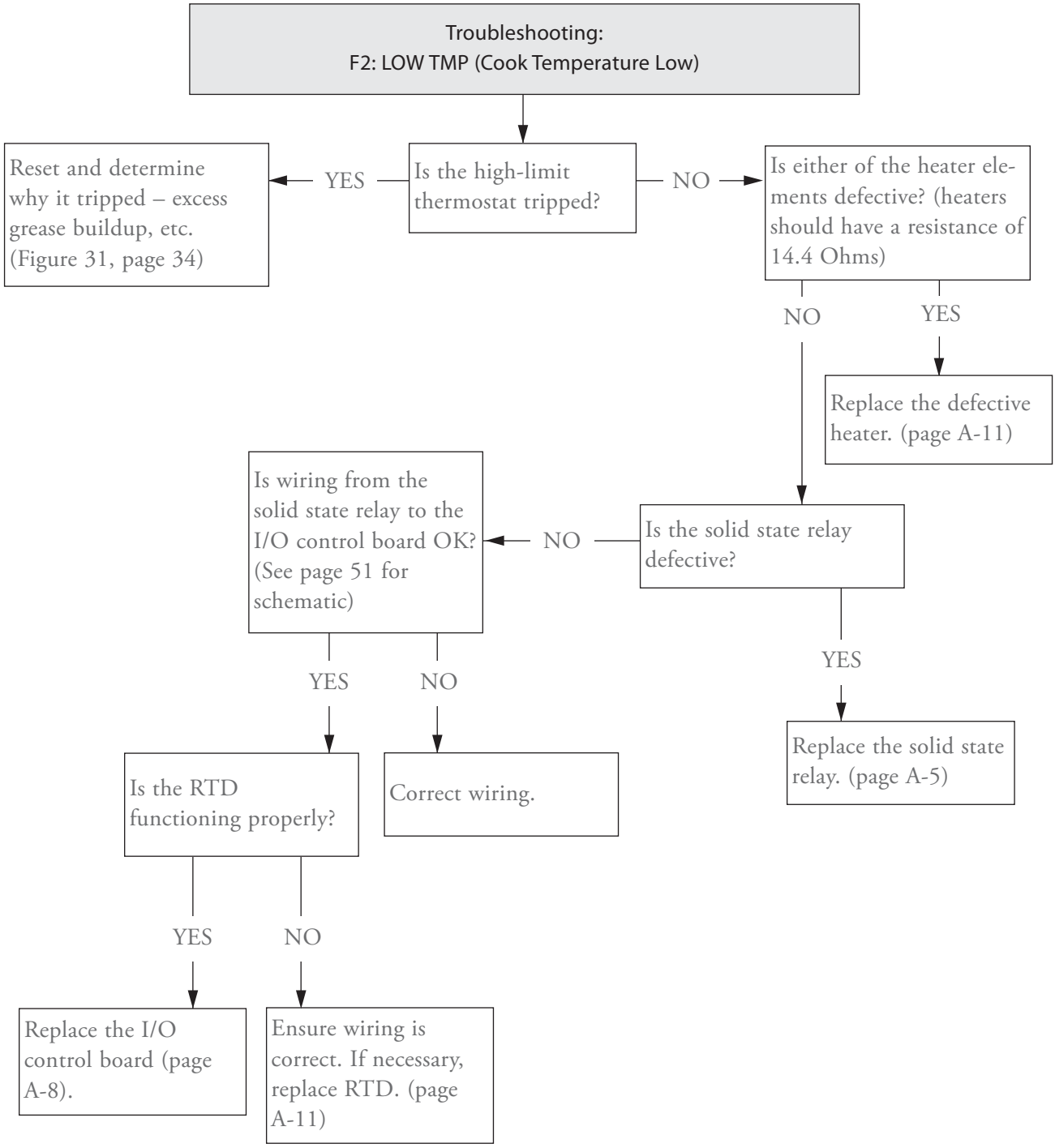
Fault Code Troubleshooting

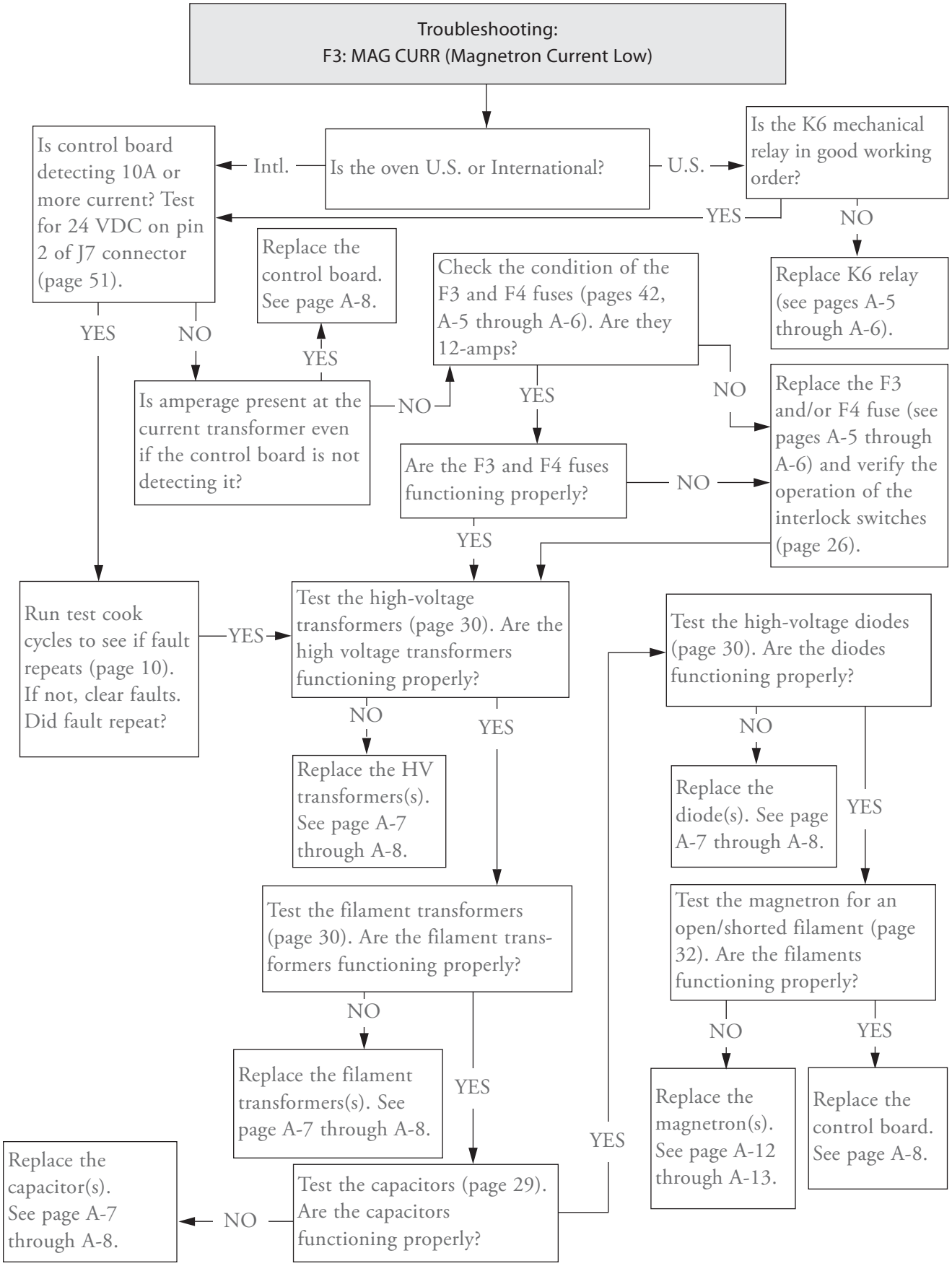
From TEST MODE, you can run oven diagnostics and check fault counts. To access TEST MODE or turn on Diagnostic mode, see page 15.

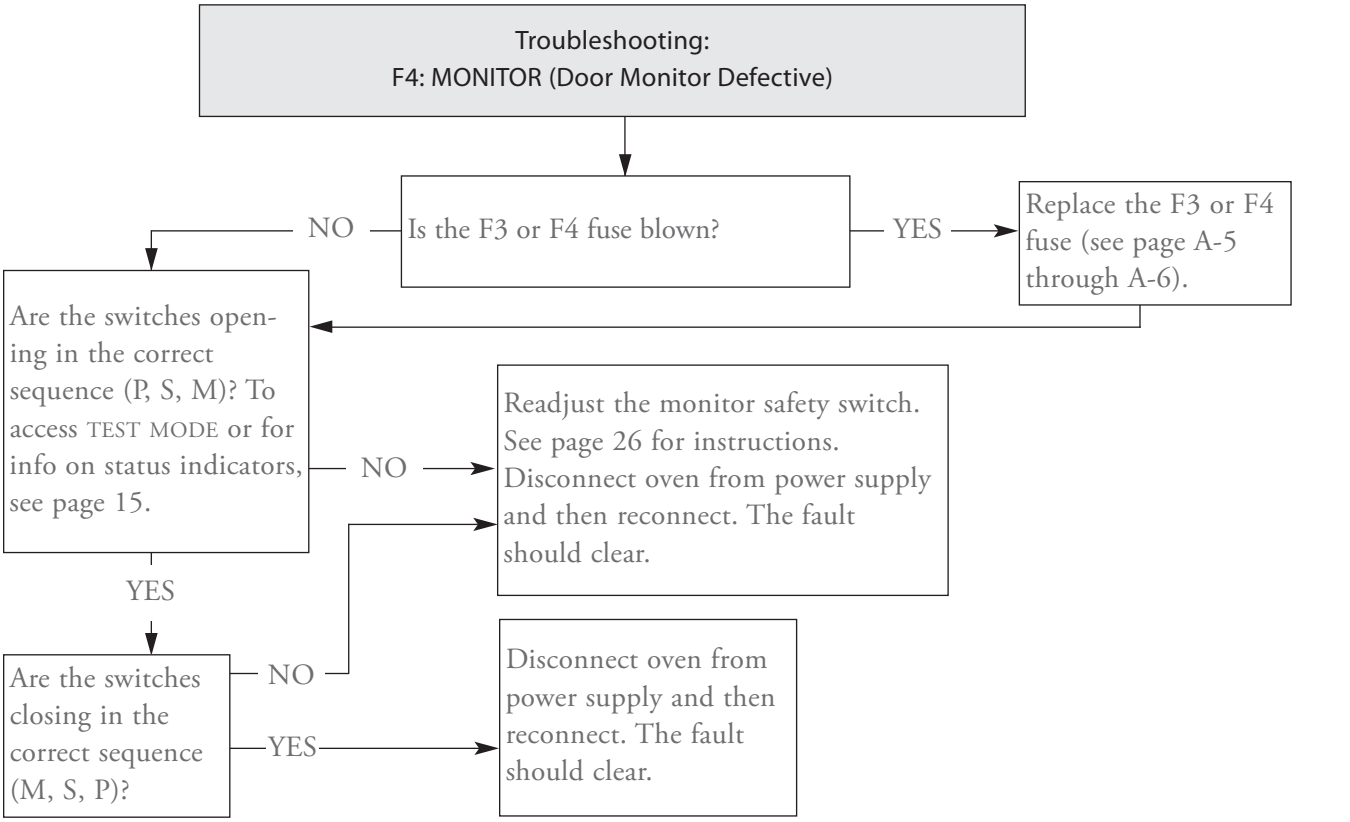

Troubleshooting:
F1: BLOWER (Blower Running Status Bad)
Are Status Indicators "B" and "T" backlit in TEST MODE? (see page 15)
YES
NO
Is the wiring harness properly connected?
Check the motor controller, top and bottom blower motors, and I/O control board. (See page 51 for schematic.)
YES
Is each blower motor spinning freely?
NO
YES
Remove obstruction or if necessary, replace blower motor(s) (pages A-9 through A-10).
Is output from I/O board to harness 1-10 volts? (Verify at test points).
YES
NO
Do resistance measurements between windings and chassis agree with values on motor windings resistance table? (Figure 33, below)
Replace the I/O board (page A-8).
NO
YES
NO
Correct the wiring or replace I/O control board (page A-8)/motor controller (page A-7) if damaged.
Replace motor controller. (page A-7)
Replace the blower motor(s). Be sure to check both the top and bottom blower motors (pages A-9 through A-10).

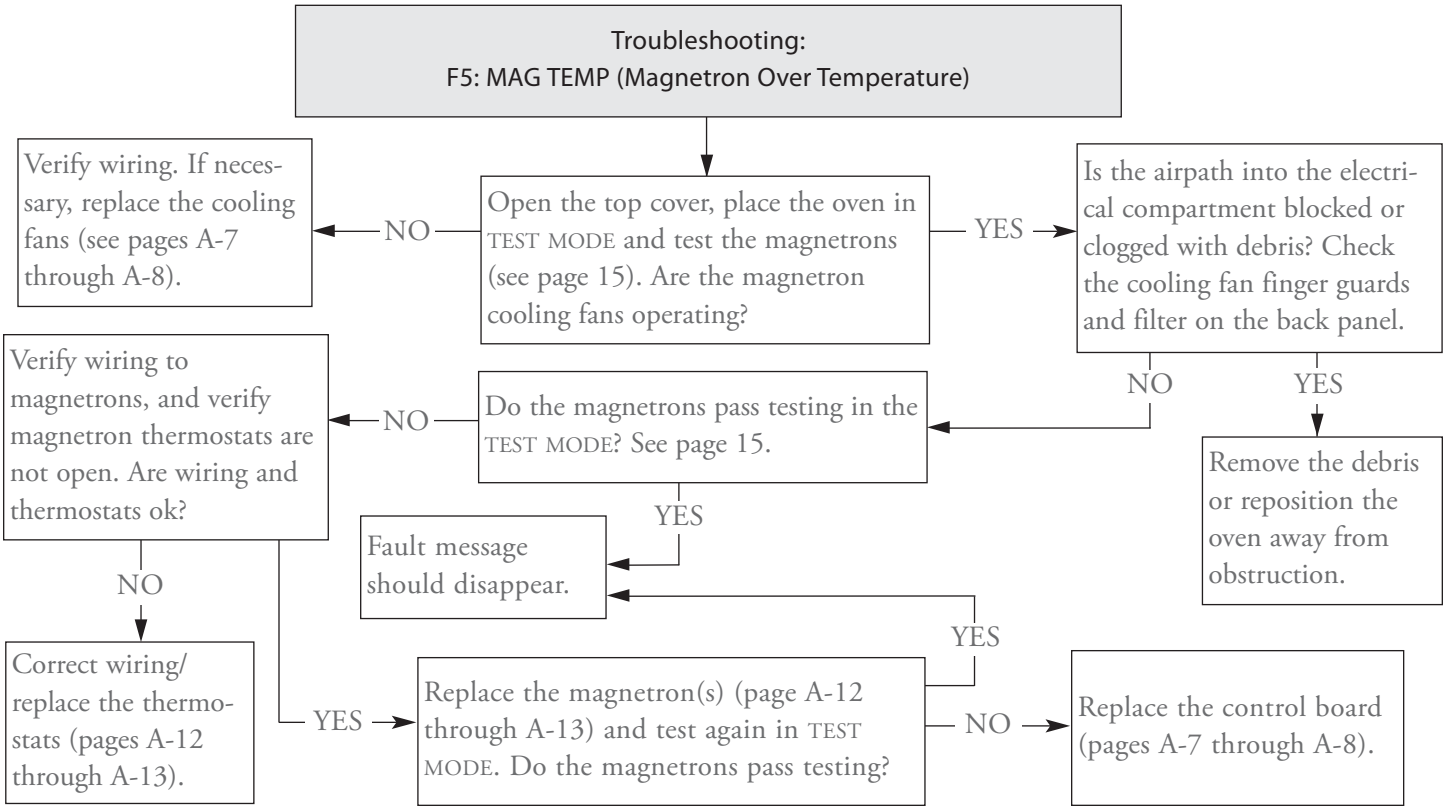
To	From	Description	Expected Resistance
Black	Red	Winding (A-B)	5.9-7.3 Ohms
Black	White	Winding (A-C)	5.9-7.3 Ohms
Red	White	Winding (B-C)	5.9-7.3 Ohms
Black, Red, or White	Green	Windings to Chassis	Open

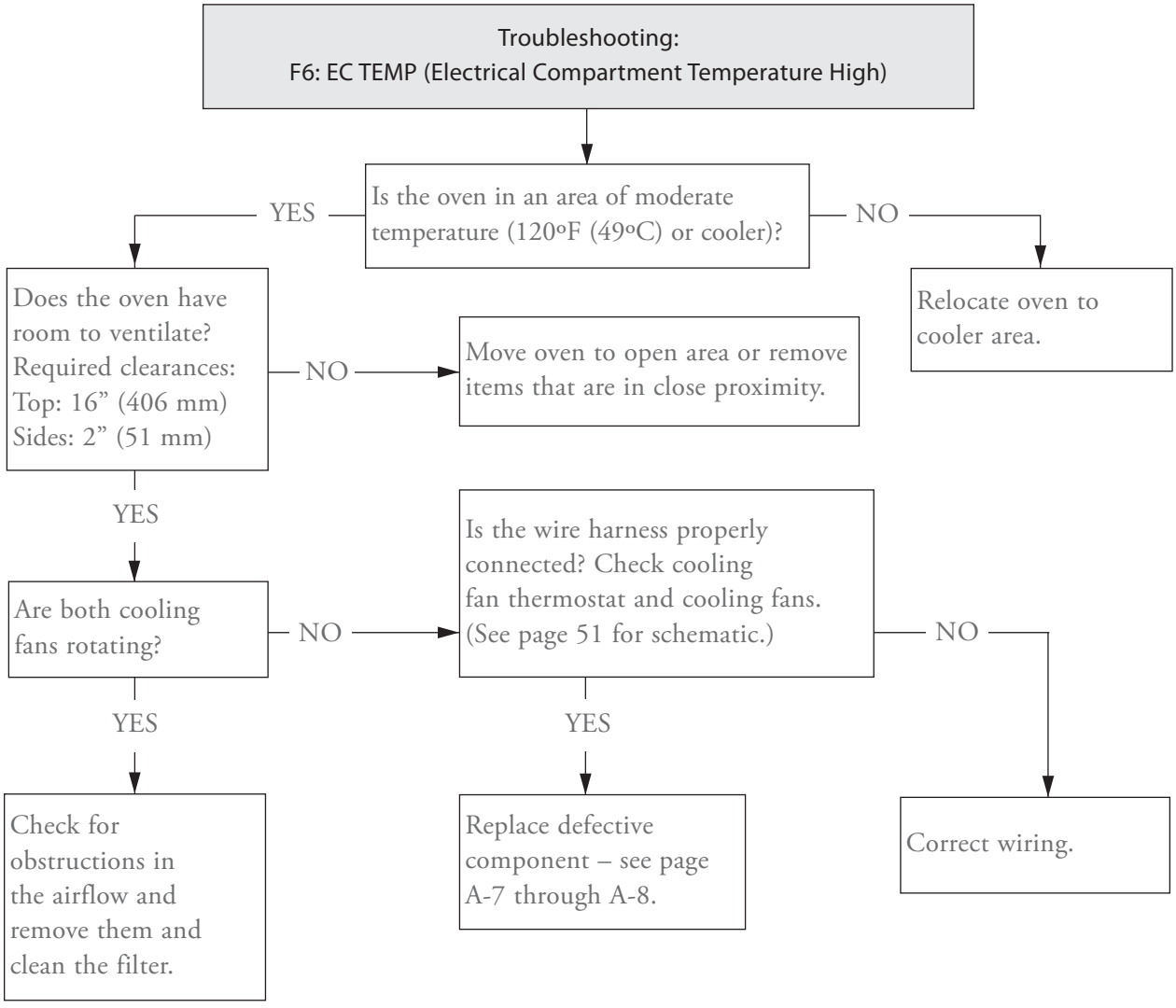
Figure 33: Motor Windings Resistance Table

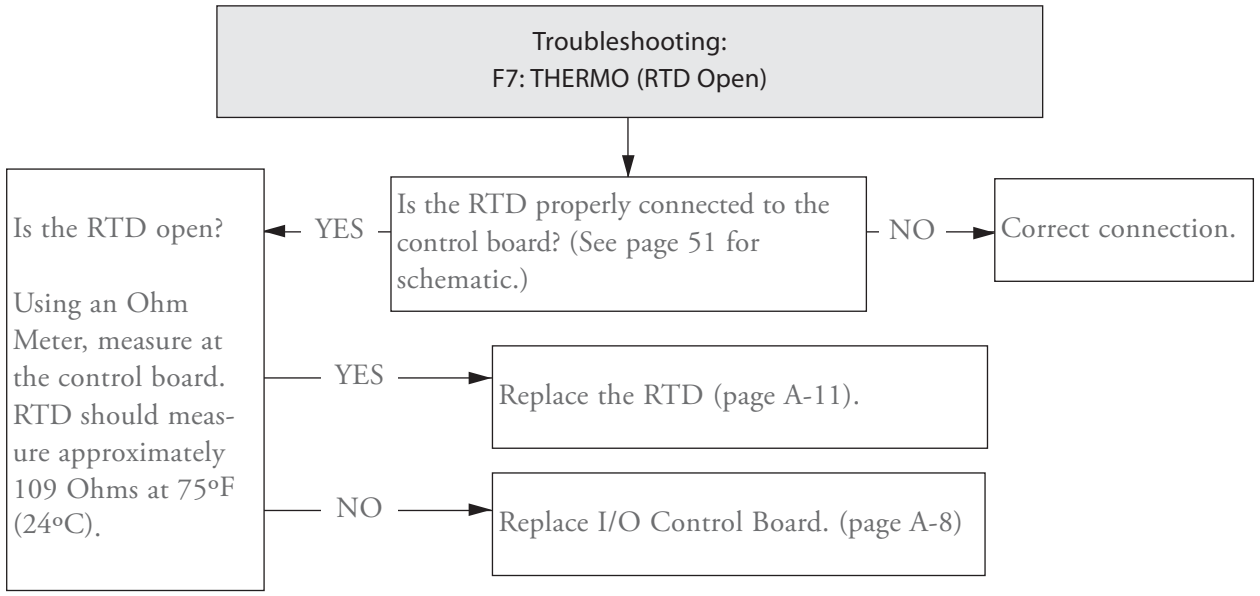

Troubleshooting:
F2: LOW TMP (Cook Temperature Low)
Is the high-limit thermostat tripped?
YES
Reset and determine why it tripped – excess grease buildup, etc. (Figure 31, page 34)
NO
Is either of the heater elements defective? (heaters should have a resistance of 14.4 Ohms)
NO
YES
Replace the defective heater. (page A-11)
Is the solid state relay defective?
NO
Is wiring from the solid state relay to the I/O control board OK? (See page 51 for schematic)
YES
Replace the solid state relay. (page A-5)
YES
NO
Is the RTD functioning properly?
Correct wiring.
YES
NO
Replace the I/O control board (page A-8).
Ensure wiring is correct. If necessary, replace RTD. (page A-11)

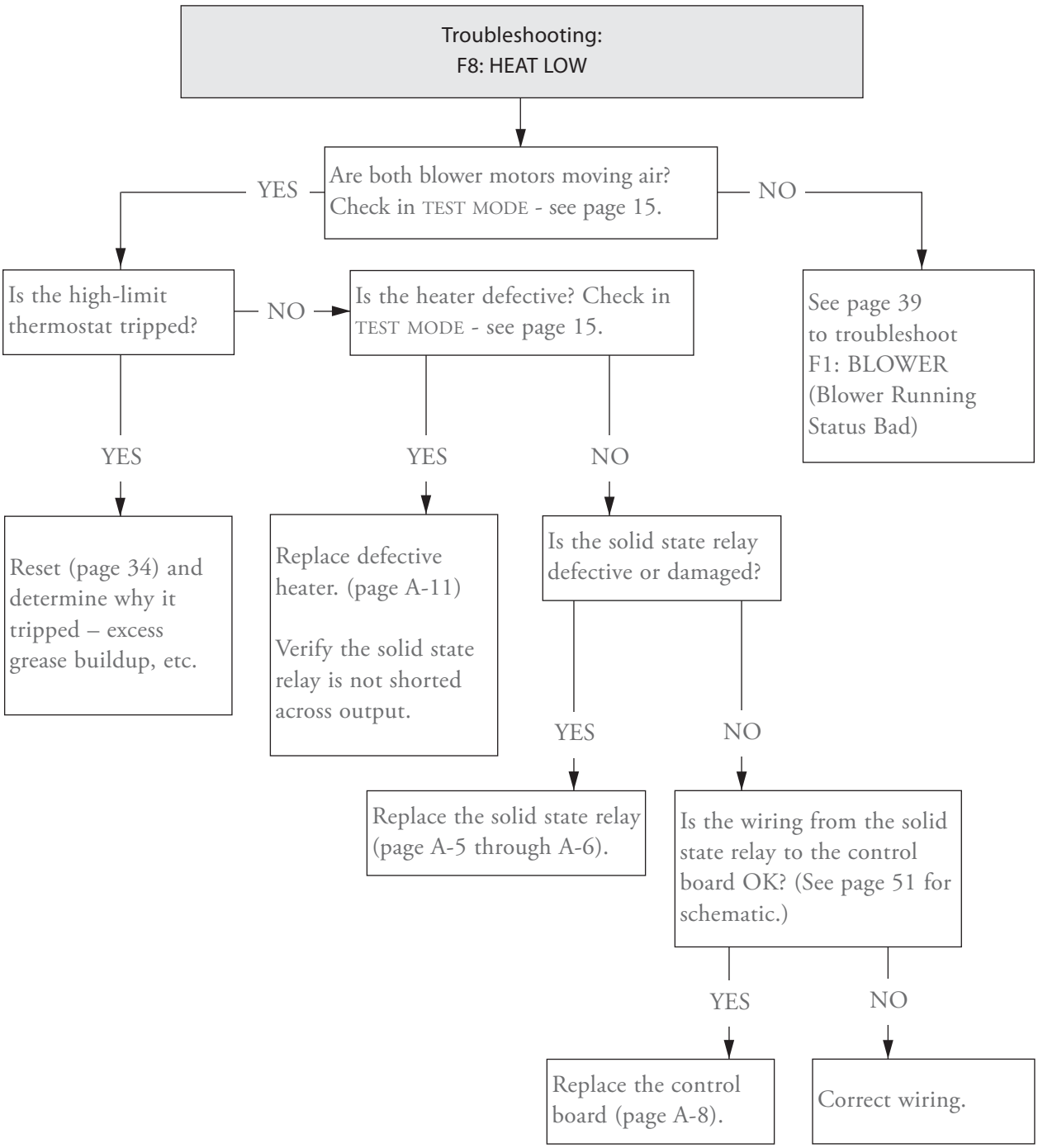

Troubleshooting:
F3: MAG CURR (Magnetron Current Low)
Is the oven U.S. or International?
Intl.
U.S.
Is control board detecting 10A or more current? Test for 24 VDC on pin 2 of J7 connector (page 51).
Is the K6 mechanical relay in good working order?
YES
NO
Replace K6 relay (see pages A-5 through A-6).
YES
NO
Replace the control board. See page A-8.
YES
Is amperage present at the current transformer even if the control board is not detecting it?
NO
Check the condition of the F3 and F4 fuses (pages 42, A-5 through A-6). Are they 12-amps?
YES
NO
Replace the F3 and/or F4 fuse (see pages A-5 through A-6) and verify the operation of the interlock switches (page 26).
Are the F3 and F4 fuses functioning properly?
NO
YES
Run test cook cycles to see if fault repeats (page 10). If not, clear faults. Did fault repeat?
YES
Test the high-voltage transformers (page 30). Are the high voltage transformers functioning properly?
NO
YES
Replace the HV transformers(s). See page A-7 through A-8.
Test the high-voltage diodes (page 30). Are the diodes functioning properly?
NO
YES
Replace the diode(s). See page A-7 through A-8.
Test the filament transformers (page 30). Are the filament transformers functioning properly?
NO
YES
Replace the filament transformers(s). See page A-7 through A-8.
Test the magnetron for an open/shorted filament (page 32). Are the filaments functioning properly?
NO
YES
Replace the magnetron(s). See page A-12 through A-13.
Replace the control board. See page A-8.
YES
Test the capacitors (page 29). Are the capacitors functioning properly?
NO
Replace the capacitor(s). See page A-7 through A-8.


Troubleshooting:
F4: MONITOR (Door Monitor Defective)
Is the F3 or F4 fuse blown?
NO
YES
Replace the F3 or F4 fuse (see page A-5 through A-6).
Are the switches opening in the correct sequence (P, S, M)? To access TEST MODE or for info on status indicators, see page 15.
NO
Readjust the monitor safety switch. See page 26 for instructions. Disconnect oven from power supply and then reconnect. The fault should clear.
YES
Are the switches closing in the correct sequence (M, S, P)?
NO
YES
Disconnect oven from power supply and then reconnect. The fault should clear.


Troubleshooting:
F5: MAG TEMP (Magnetron Over Temperature)
Open the top cover, place the oven in TEST MODE and test the magnetrons (see page 15). Are the magnetron cooling fans operating?
NO
YES
Verify wiring. If necessary, replace the cooling fans (see pages A-7 through A-8).
Is the airpath into the electrical compartment blocked or clogged with debris? Check the cooling fan finger guards and filter on the back panel.
NO
YES
Remove the debris or reposition the oven away from obstruction.
Do the magnetrons pass testing in the TEST MODE? See page 15.
NO
YES
Verify wiring to magnetrons, and verify magnetron thermostats are not open. Are wiring and thermostats ok?
NO
YES
Fault message should disappear.
Correct wiring/ replace the thermostats (pages A-12 through A-13).
YES
Replace the magnetron(s) (page A-12 through A-13) and test again in TEST MODE. Do the magnetrons pass testing?
NO
YES
Replace the control board (pages A-7 through A-8).

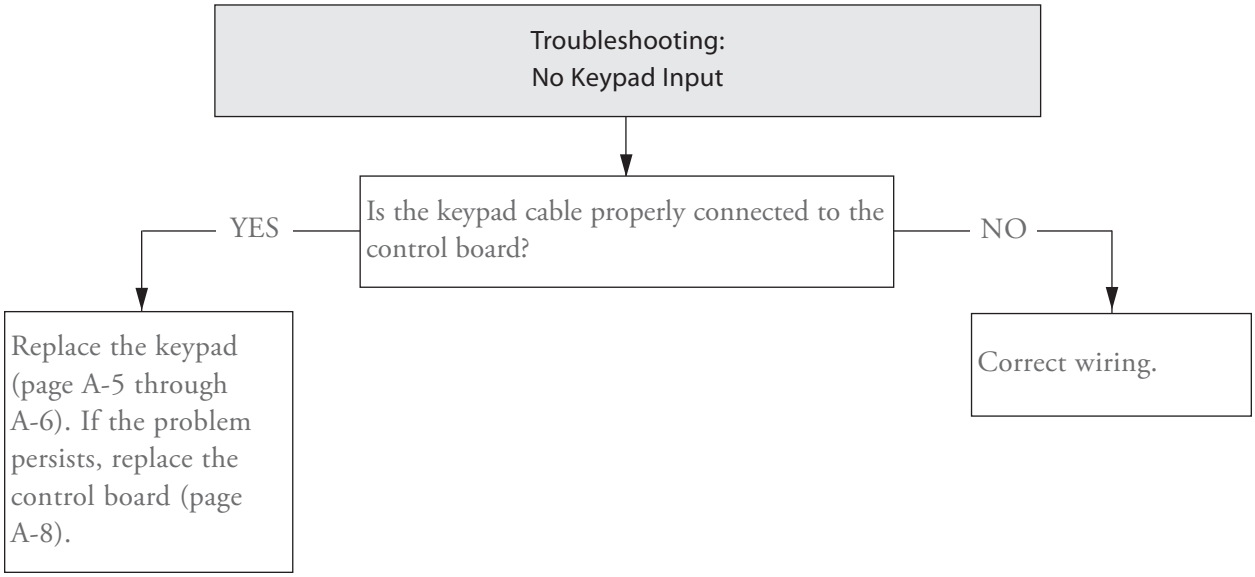

Troubleshooting:
F6: EC TEMP (Electrical Compartment Temperature High)
Is the oven in an area of moderate temperature (120ºF (49ºC) or cooler)?
YES
NO
Relocate oven to cooler area.
Does the oven have room to ventilate? Required clearances: Top: 16" (406 mm) Sides: 2" (51 mm)
NO
Move oven to open area or remove items that are in close proximity.
YES
Are both cooling fans rotating?
NO
Is the wire harness properly connected? Check cooling fan thermostat and cooling fans. (See page 51 for schematic.)
NO
YES
YES
Check for obstructions in the airflow and remove them and clean the filter.
Replace defective component – see page A-7 through A-8.
Correct wiring.

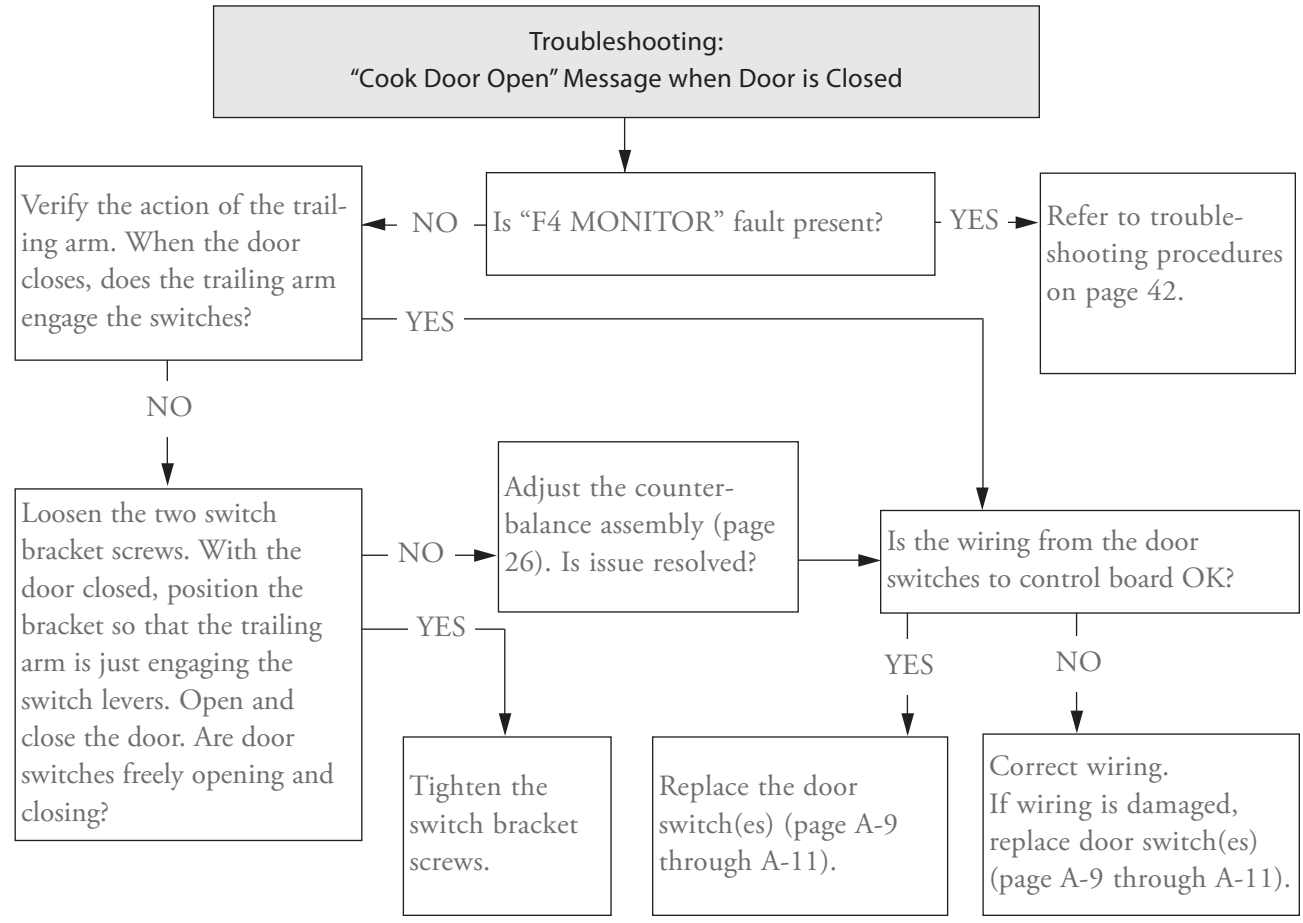

Troubleshooting:
F7: THERMO (RTD Open)
Is the RTD properly connected to the control board? (See page 51 for schematic.)
YES
NO
Correct connection.
Is the RTD open?
Using an Ohm Meter, measure at the control board. RTD should measure approximately 109 Ohms at 75ºF (24ºC).
YES
Replace the RTD (page A-11).
NO
Replace I/O Control Board. (page A-8)

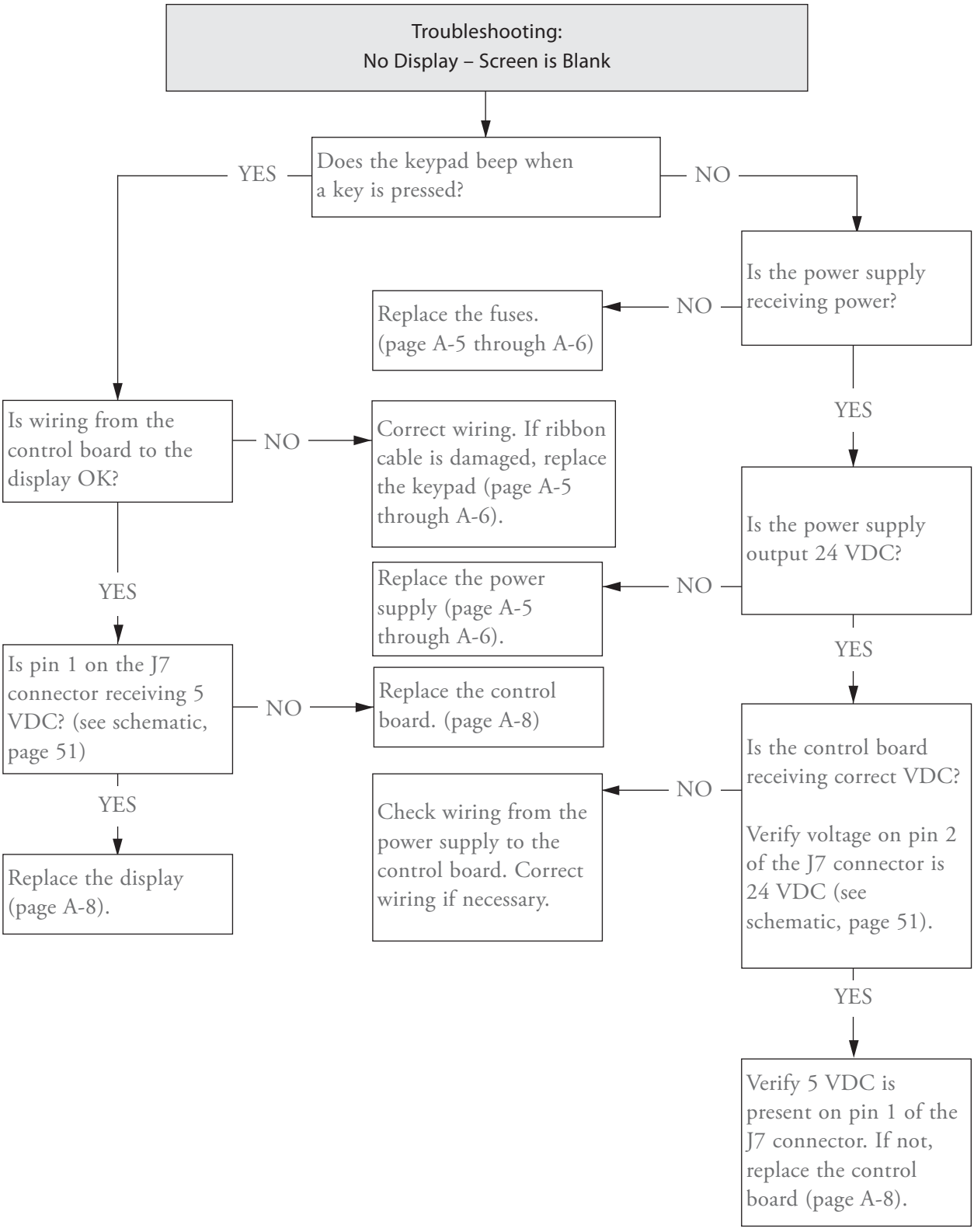

Troubleshooting:
F8: HEAT LOW
Are both blower motors moving air? Check in TEST MODE - see page 15.
YES
NO
Is the high-limit thermostat tripped?
NO
Is the heater defective? Check in TEST MODE - see page 15.
See page 39 to troubleshoot F1: BLOWER (Blower Running Status Bad)
YES
YES
NO
Reset (page 34) and determine why it tripped – excess grease buildup, etc.
Replace defective heater. (page A-11)
Verify the solid state relay is not shorted across output.
Is the solid state relay defective or damaged?
YES
NO
Replace the solid state relay (page A-5 through A-6).
Is the wiring from the solid state relay to the control board OK? (See page 51 for schematic.)
YES
NO
Replace the control board (page A-8).
Correct wiring.

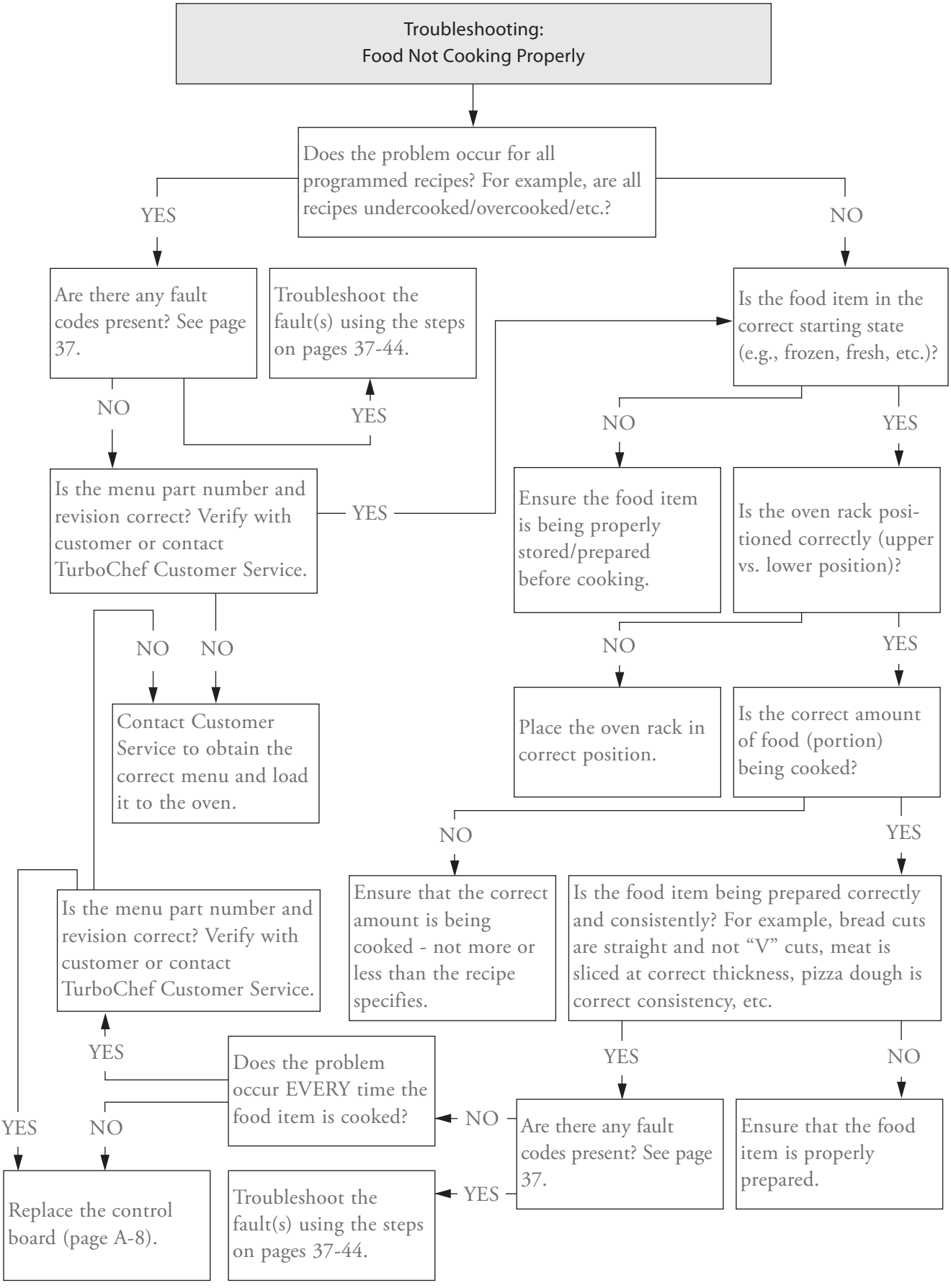
Non-Fault Code Troubleshooting

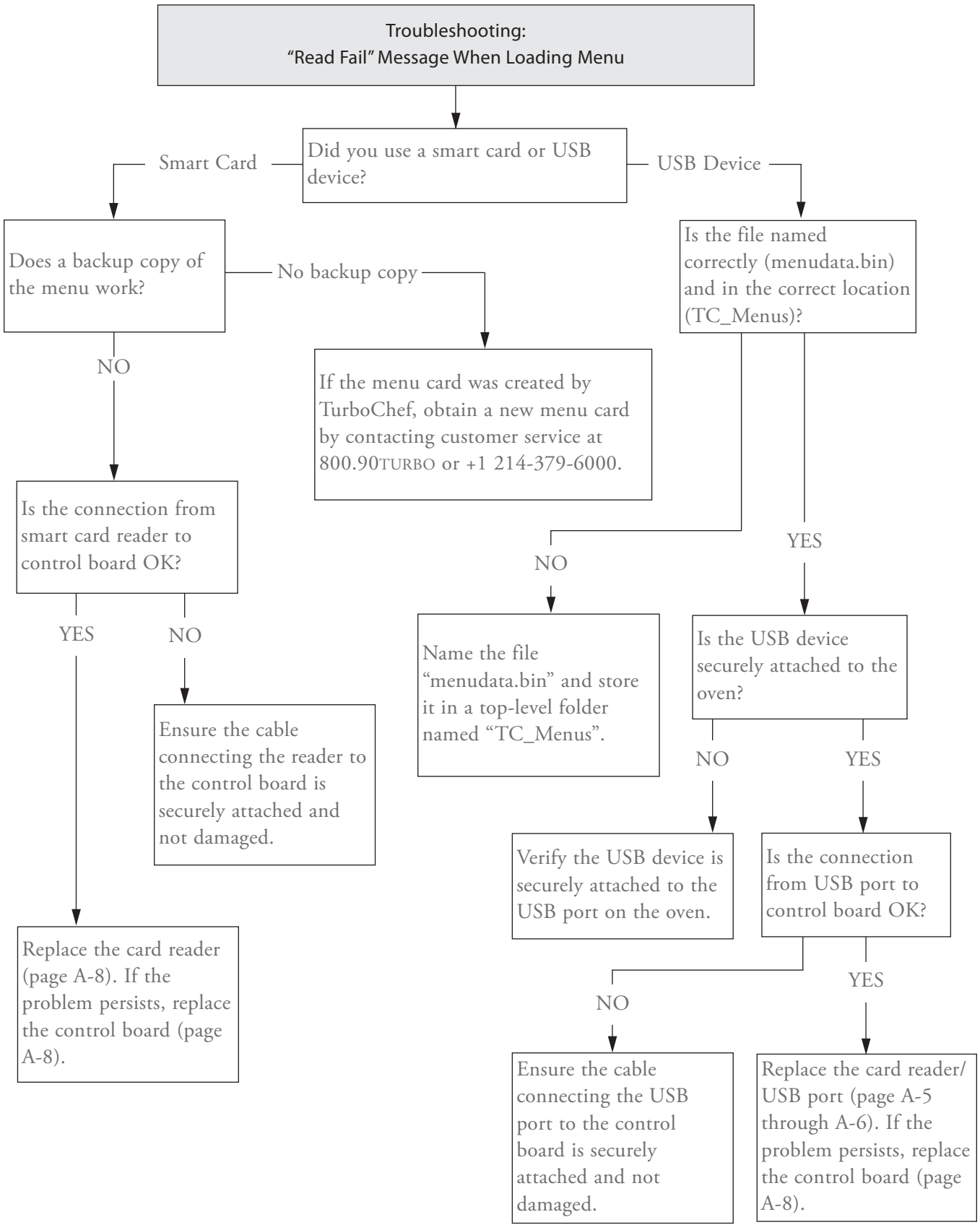
This section provides troubleshooting tips for issues that may occur independently of an oven fault.

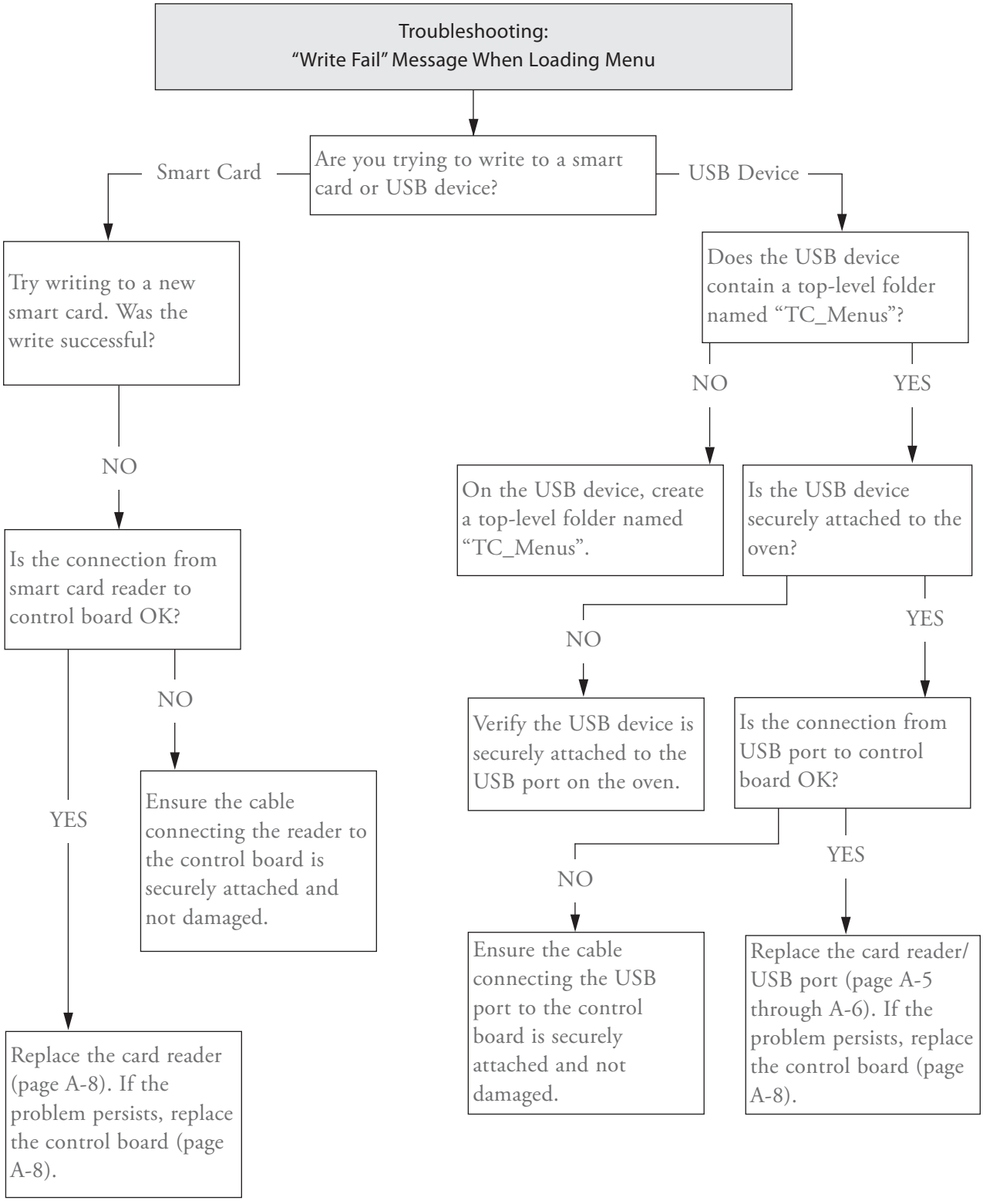

Troubleshooting:
No Keypad Input
Is the keypad cable properly connected to the control board?
YES
NO
Replace the keypad (page A-5 through A-6). If the problem persists, replace the control board (page A-8).
Correct wiring.

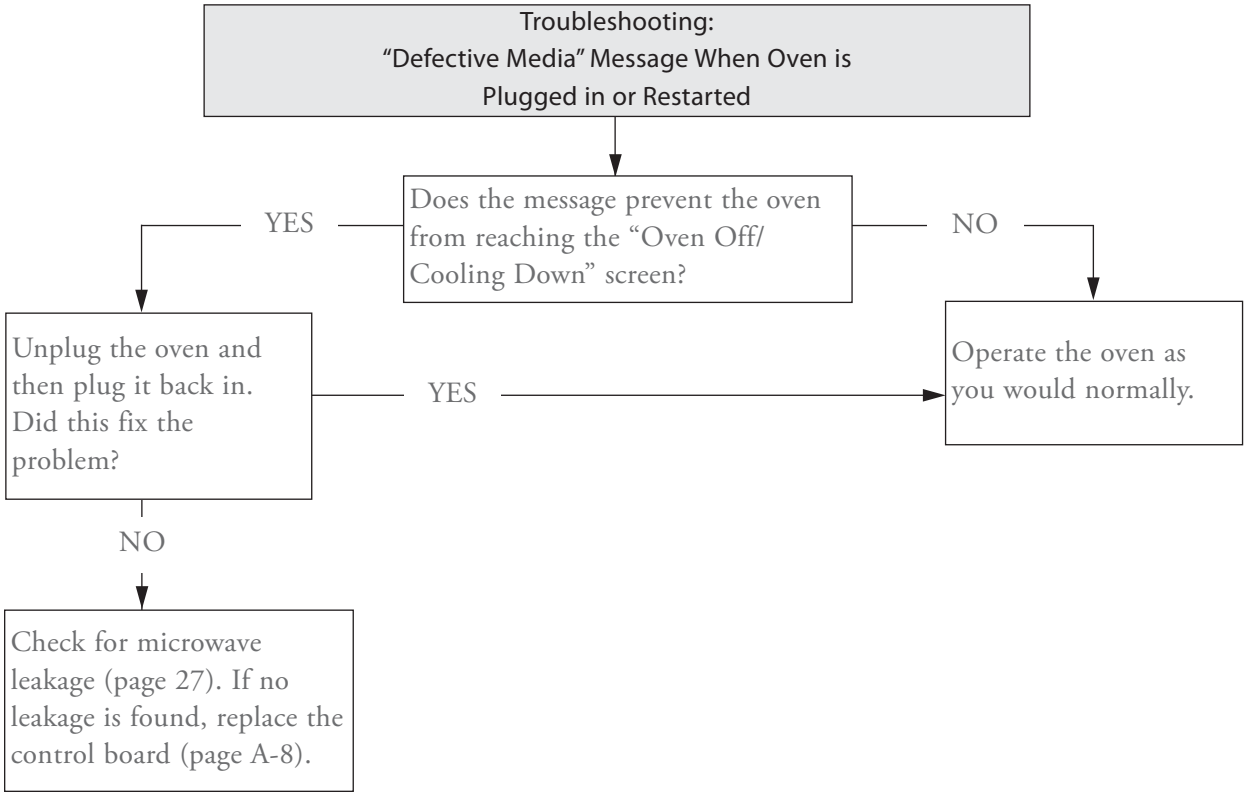

Troubleshooting:
"Cook Door Open" Message when Door is Closed
Is "F4 MONITOR" fault present?
NO
YES
Refer to trouble-shooting procedures on page 42.
Verify the action of the trail-ing arm. When the door closes, does the trailing arm engage the switches?
YES
NO
Loosen the two switch bracket screws. With the door closed, position the bracket so that the trailing arm is just engaging the switch levers. Open and close the door. Are door switches freely opening and closing?
NO
Adjust the counter-balance assembly (page 26). Is issue resolved?
YES
Tighten the switch bracket screws.
Is the wiring from the door switches to control board OK?
YES
NO
Replace the door switch(es) (page A-9 through A-11).
Correct wiring.
If wiring is damaged, replace door switch(es) (page A-9 through A-11).


Troubleshooting:
No Display – Screen is Blank
Does the keypad beep when a key is pressed?
YES
NO
Is the power supply receiving power?
NO
Replace the fuses. (page A-5 through A-6)
YES
Is the power supply output 24 VDC?
NO
Replace the power supply (page A-5 through A-6).
YES
Is the control board receiving correct VDC?
Verify voltage on pin 2 of the J7 connector is 24 VDC (see schematic, page 51).
NO
Check wiring from the power supply to the control board. Correct wiring if necessary.
YES
Verify 5 VDC is present on pin 1 of the J7 connector. If not, replace the control board (page A-8).
Is wiring from the control board to the display OK?
NO
Correct wiring. If ribbon cable is damaged, replace the keypad (page A-5 through A-6).
YES
Is pin 1 on the J7 connector receiving 5 VDC? (see schematic, page 51)
NO
Replace the control board. (page A-8)
YES
Replace the display (page A-8).


Troubleshooting:
Food Not Cooking Properly
Does the problem occur for all programmed recipes? For example, are all recipes undercooked/overcooked/etc.?
YES
NO
Are there any fault codes present? See page 37.
Troubleshoot the fault(s) using the steps on pages 37-44.
NO
YES
Is the menu part number and revision correct? Verify with customer or contact TurboChef Customer Service.
YES
NO
NO
Contact Customer Service to obtain the correct menu and load it to the oven.
Is the food item in the correct starting state (e.g., frozen, fresh, etc.)?
NO
YES
Ensure the food item is being properly stored/prepared before cooking.
Is the oven rack positioned correctly (upper vs. lower position)?
NO
YES
Place the oven rack in correct position.
Is the correct amount of food (portion) being cooked?
NO
YES
Ensure that the correct amount is being cooked - not more or less than the recipe specifies.
Is the food item being prepared correctly and consistently? For example, bread cuts are straight and not "V" cuts, meat is sliced at correct thickness, pizza dough is correct consistency, etc.
YES
NO
Are there any fault codes present? See page 37.
Ensure that the food item is properly prepared.
NO
YES
Troubleshoot the fault(s) using the steps on pages 37-44.
Does the problem occur EVERY time the food item is cooked?
YES
NO
Is the menu part number and revision correct? Verify with customer or contact TurboChef Customer Service.
YES
NO
Replace the control board (page A-8).


Troubleshooting:
"Read Fail" Message When Loading Menu
Did you use a smart card or USB device?
Smart Card
USB Device
Does a backup copy of the menu work?
No backup copy
If the menu card was created by TurboChef, obtain a new menu card by contacting customer service at 800.90TURBO or +1 214-379-6000.
NO
Is the connection from smart card reader to control board OK?
YES
NO
Ensure the cable connecting the reader to the control board is securely attached and not damaged.
Replace the card reader (page A-8). If the problem persists, replace the control board (page A-8).
Is the file named correctly (menudata.bin) and in the correct location (TC_Menus)?
NO
YES
Name the file "menudata.bin" and store it in a top-level folder named "TC_Menus".
Is the USB device securely attached to the oven?
NO
YES
Verify the USB device is securely attached to the USB port on the oven.
Is the connection from USB port to control board OK?
NO
YES
Ensure the cable connecting the USB port to the control board is securely attached and not damaged.
Replace the card reader/ USB port (page A-5 through A-6). If the problem persists, replace the control board (page A-8).


Troubleshooting:
"Write Fail" Message When Loading Menu
Are you trying to write to a smart card or USB device?
Smart Card
USB Device
Try writing to a new smart card. Was the write successful?
NO
Is the connection from smart card reader to control board OK?
NO
Ensure the cable connecting the reader to the control board is securely attached and not damaged.
YES
Replace the card reader (page A-8). If the problem persists, replace the control board (page A-8).
Does the USB device contain a top-level folder named "TC_Menus"?
NO
YES
On the USB device, create a top-level folder named "TC_Menus".
Is the USB device securely attached to the oven?
NO
YES
Verify the USB device is securely attached to the USB port on the oven.
Is the connection from USB port to control board OK?
NO
YES
Ensure the cable connecting the USB port to the control board is securely attached and not damaged.
Replace the card reader/ USB port (page A-5 through A-6). If the problem persists, replace the control board (page A-8).


Troubleshooting:
"Defective Media" Message When Oven is Plugged in or Restarted
Does the message prevent the oven from reaching the "Oven Off/ Cooling Down" screen?
YES
NO
Unplug the oven and then plug it back in. Did this fix the problem?
YES
Operate the oven as you would normally.
NO
Check for microwave leakage (page 27). If no leakage is found, replace the control board (page A-8).

Oven Schematic

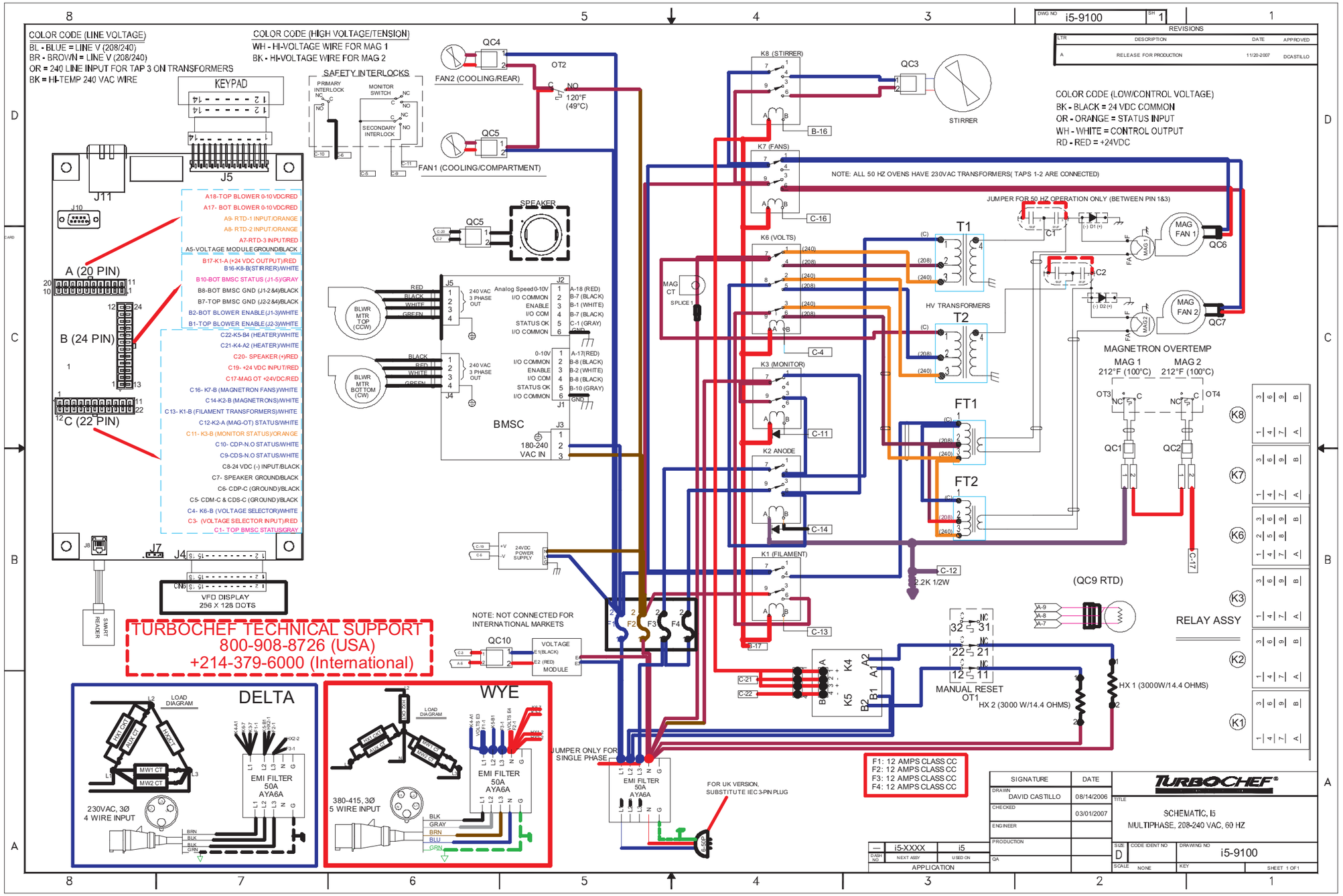


Figure 34: i5 Oven Schematic

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Appendix - Replacing Oven Components

Comprehensive Table of Oven Components

⚠ DANGER: Before replacing any oven component, ensure the oven is removed from any power source. Replacing a component while the oven is plugged in can result in serious injury or death.

⚠ NOTE: For hardware, see the illustrations contained in this appendix.

To Replace This...		First Remove This...					
Item	Part Number	No Covers (Page A-3)	No Covers-Open Top (Page A-5)	Top Cover (Page A-7)	Left Side Cover (Page A-9)	Right Side Cover (Page A-11)	Items Obstructing Access
Blower Motor (Bottom)	I5-9042				✔		EMI Filter, EMI Fil Brkt
Blower Motor (Top)	I5-9040				✔		EMI Filter, EMI Fil Brkt
Blower Wheel (Bottom)	103550				✔		Blower Motors
Blower Wheel (Top)	103551				✔		Blower Motors
Capacitor, High-Voltage	100232			✔			Capacitor Clamps
Capacitor Clamp	100134			✔			
Catalytic Converter	I5-9066					✔	RTD and Heater Assy
Control Board	CON-7002			✔			
Cooling Fan (Exterior)	TC3-0433			✔			Filter, Filter Brkt, Finger Guard
Cooling Fan (Interior)	TC3-0433			✔			
Cooling Fan Finger Guard	100086			✔			Filter, Filter Bracket
Cooling Fan, Magnetron	100083			✔			
Cooling Fan (Magnetron) Bracket	I5-9263			✔			
Diodes, High-Voltage	100481			✔			
Display	103360			✔			
Door Assembly*	I5-9308	✔					
Door Gasket	I5-9309	✔					Shunt Plate
Door Handle	I5-9253	✔					Door Skin
Door Skin	I5-9109	✔					Door
Drain Pan	I5-9252	✔					
EMI Filter	100546				✔		
EMI Filter Bracket	I5-9257				✔		
Filter, Air	I5-9039	✔					
Filter Bracket	I5-9060	✔					
Fuse, F1, 12-amp	100592		✔				
Fuse, F2, 12-amp	100592		✔				
Fuse, F3, 12-amp	100592		✔				
Fuse, F4, 12-amp	100592		✔				
Fuse Holder	103548		✔				Fuses
Hand Grip	I5-9256	✔					
Heat Shield/Support Bracket	I5-9224		✔				
Heat Slinger	102708				✔		Blower Motors
Heater Assembly	I5-9284					✔	RTD
Helper Spring, Interlock Switch (Left)	103599					✔	
Helper Spring, Interlock Switch (Right)	103599				✔		
Hinge, Bracket, Slide, LHS	I5-9196				✔	✔	Door, Switches
Hinge, Bracket, Slide, RHS	I5-9195				✔	✔	Door, Switches
Hinge, Cam, Weldment, LHS	I5-9313				✔	✔	Door, Switches
Hinge, Cam, Weldment, RHS	I5-9314				✔	✔	Door, Switches

** See page A-12 through A-13 for removing door, hinge components, magnetrons, magnetron thermostats, or waveguides.*

To Replace This...		First Remove This...					
Item	Part Number	No Covers (Page A-3)	No Covers-Open Top (Page A-5)	Top Cover (Page A-7)	Left Side Cover (Page A-9)	Right Side Cover (Page A-11)	Items Obstructing Access
Hinge, Guide, Switch Slide, Lower	I5-9316				✔	✔	Door, Switches
Hinge, Guide, Switch Slide, Upper	I5-9315				✔	✔	Door, Switches
Hinge, Gusset, LHS	I5-9178				✔	✔	Door, Switches
Hinge, Gusset, RHS	I5-9179				✔	✔	Door, Switches
Hinge Module, Base	I5-9193				✔	✔	Door, Switches
Hinge, Torsion Bar	I5-9144				✔	✔	Door, Switches
Hinge, Weldment, Countrblnce Bracket, LHS	I5-9326				✔	✔	Door, Switches
Hinge, Weldment, Countrblnce Bracket, RHS	I5-9327				✔	✔	Door, Switches
Interlock Switch (Monitor)	102012					✔	
Interlock Switch (Primary)	102012				✔		
Interlock Switch (Secondary)	102012					✔	
Jetplate (Bottom)	I5-9159	✔					Rack
Jetplate (Top)	I5-9203	✔					
Keypad	I5-9247		✔				
Lower Front Panel	I5-9246	✔					Drain Pan
Magnetron (Left)*	NGC-3015			✔	✔		
Magnetron (Right)*	NGC-3015			✔		✔	
Motor Controller	100446			✔			
Power Cord	I5-9127				✔		
Power Supply	101211		✔				Pwr Supply Brkt
Power Supply Bracket	I5-9280		✔				
Rack	I5-9168	✔					
Rack Support	I5-9165	✔					Rack
Relay (K1 - Filament)	101273		✔				
Relay (K2 - Anode)	101273		✔				
Relay (K3 - Monitor)	101273		✔				
Relay (K6 - Voltage)	101272		✔				
Relay (K7 - Mag Fan)	101273		✔				
Relay (K8 - Stirrer)	101273		✔				
Relay Bracket	I5-9261		✔				
Relay, Solid State (K4/K5 - Heaters)	101286		✔				
RTD, Cook Cavity	HHC-6517					✔	
Shunt Plate Assembly	I5-9307	✔					Door
Smart Card/USB Port	CON-7005			✔			Control Board
Speaker	104155		✔				
Stirrer	I5-9154	✔					Top Jetplate
Stirrer Hub	104132			✔			Stirrer Motor
Stirrer Motor	I5-9361			✔			Stirrer Mtr Bracket
Stirrer Motor Bracket	I5-9075			✔			
Stirrer Shaft	I5-9151			✔			Stir Mtr, Brkt, Top Jetplate, Stirrer
Thermocouple, EC	700-1199			✔			

** See page A-12 through A-13 for removing door, hinge components, magnetrons, magnetron thermostats, or waveguides.*

To Replace This...		First Remove This...					
Item	Part Number	No Covers (Page A-3)	No Covers-Open Top (Page A-5)	Top Cover (Page A-7)	Left Side Cover (Page A-9)	Right Side Cover (Page A-11)	Items Obstructing Access
Thermostat, Cooling Fans	102086			✔			
Thermostat, High-Limit	102075			✔			Filter, Filter Bracket
Thermostat, Magnetron (Left)*	102070			✔	✔		Magnetron (Left)
Thermostat, Magnetron (Right)*	102070			✔		✔	Magnetron (Right)
Transformer, Filament	NGC-3061-1			✔			
Transformer, High-Voltage	NGC-3062-1			✔			
Vent Catalyst Foil Pack	RWD-9191	✔					Vent Tube Cover
Vent Tube Cover	I5-9209	✔					Heat Chnl Wldmt
Voltage Sensor	100783				✔		
Waveguide (Left)*	I5-9330			✔	✔		Mag, FT/Diode Bracket, Capacitor, WG Gasket
Waveguide (Right)*	I5-9330			✔		✔	Mag, FT/Diode Bracket, Capacitor, WG Gasket
Waveguide Gasket (Left)*	I5-9331			✔	✔		Mag, FT/Diode Bracket, Capacitor, WG Gasket
Waveguide Gasket (Right)*	I5-9331			✔		✔	Mag, FT/Diode Bracket, Capacitor, WG Gasket
Weldment, Heat Channel, Vent Tube	NGC-1397	✔					

** See page A-12 through A-13 for removing door, hinge components, magnetrons, magnetron thermostats, or waveguides.*

Replacing Items - No Cover Removal Required (Figures A-1, A-2)

⚠ DANGER: Before replacing any oven component, ensure the oven is removed from any power source. Replacing a component while the oven is plugged in can result in serious injury or death.

⚠ CAUTION: Before removing/installing any component, make sure it is disconnected from the wire harness (where applicable).

⚠ NOTE: Hardware listed is required for installing component to oven.

Figure Reference #	Item Description	Item Part Number	Hardware Description	Hardware Part Number(s)
1	Door Assembly*	I5-9308	Screw, #8-32 x 3/8, PFH, 100 Deg, SS	102809 (qty 6)
2	Door Gasket	I5-9309	None	None
3	Door Handle	I5-9253	Screw, 1/4-20 x .25 lg, Serrated Hex	102947 (qty 4)
4	Door Skin	I5-9109	Screw, 6-32 x .38, PFH, 100 Deg, SS	101430 (qty 9)
5	Drain Pan	I5-9252	None	None
6	Filter, Air	I5-9039	None	None
7	Filter Bracket	i5-9060	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH Plug, Knockout, 1/2", Black	A) 101688 (qty 6) B) 101191 (qty 1)
8	Hand Grip	I5-9256	Screw, #8 X 1/2, Serrated, PHTRH, Black Oxide	101691 (qty 2)
9	Jetplate (Bottom)	I5-9159	N/A	Included with part

Figure Reference #	Item Description	Item Part Number	Hardware Description	Hardware Part Number(s)
10	Jetplate (Top)	I5-9203	None	None
11	Lower Front Panel	i5-9246	None	None
12	Rack	I5-9168	None	None
13	Rack Support	I5-9165	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 4)
14	Shunt Plate Assembly	I5-9307	Screw, 6-32 x .38, PFH, 100 Deg, SS	101430 (qty 9)
15	Stirrer	I5-9154	A) Screw, #10-32 x 1/2, PPH, SS B) Washer, Lock, #10 Ext Tooth, Cres	A) 101460 (qty 1) B) 102260 (qty 1)
16	Vent Catalyst Foil Pack	RWD-9191	None	None
17	Vent Tube Cover	I5-9209	Screw, #6 x 1/2, PPHD, Drill Point, SS	101687 (qty 2)
18	Weldment, Heat Chnl, Vent Tube	NGC-1397	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 6)

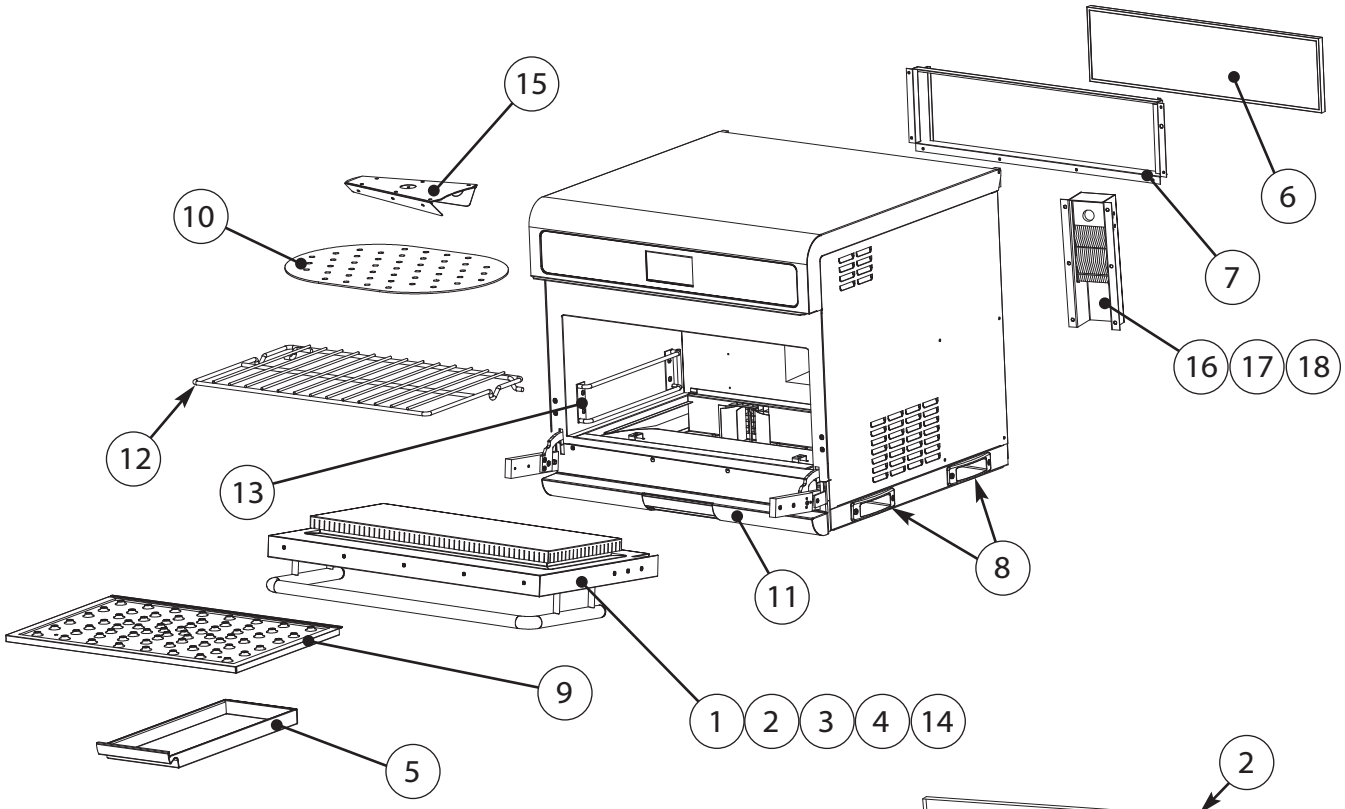

Figure A-1: No Cover Removal Required

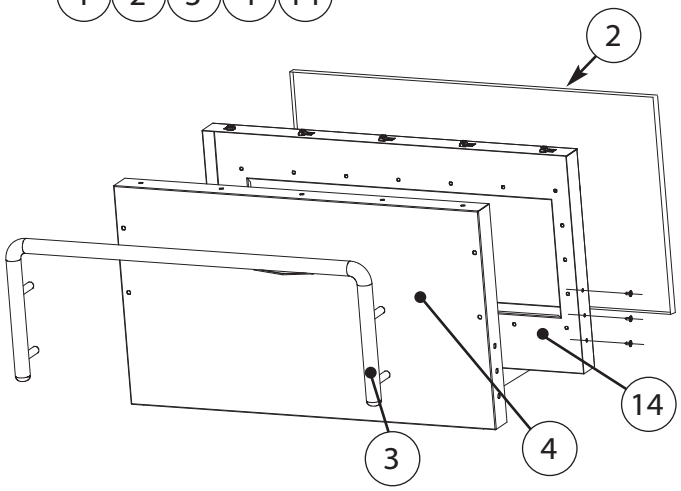

Figure A-2: Door Assembly Detail

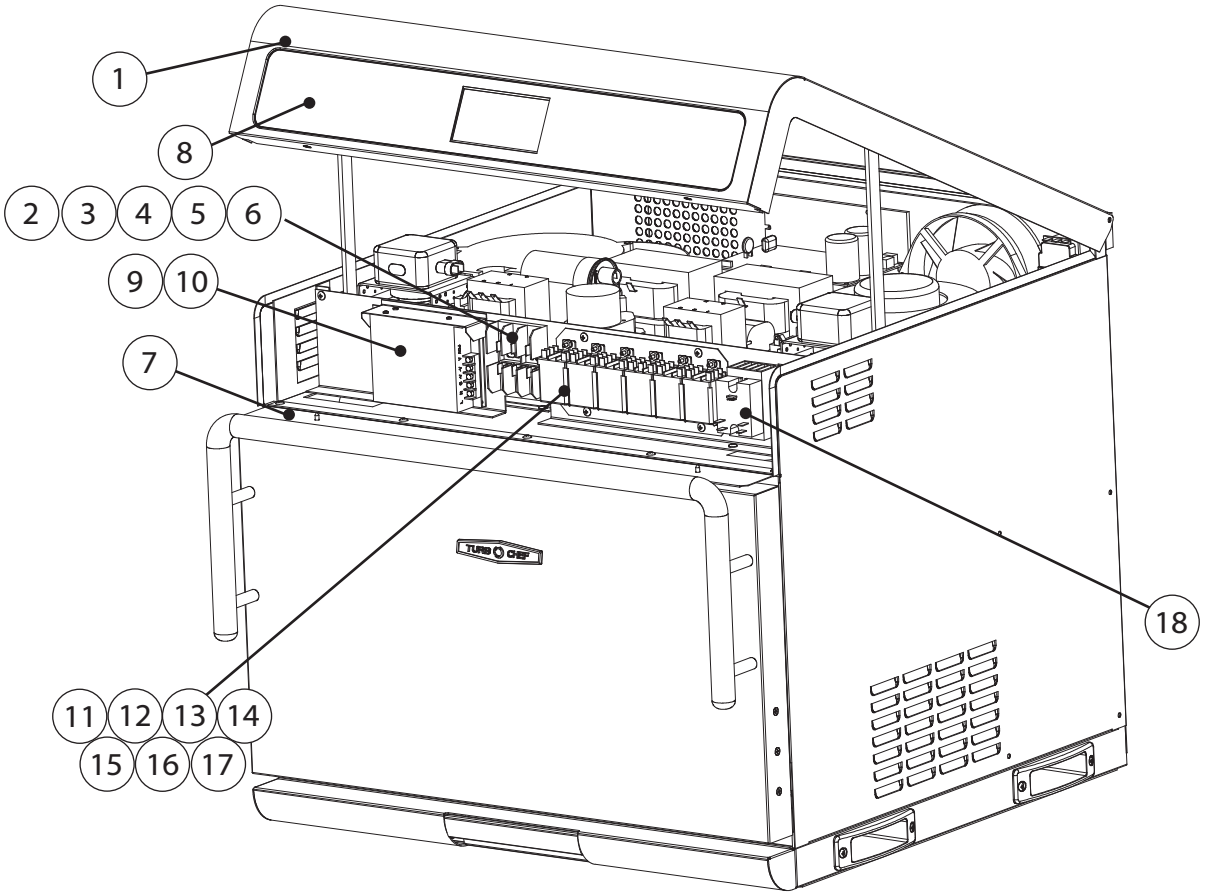

Figure A-3: Opening Top Cover Required

Replacing Items - Opening Top Cover Required (Figure A-3)

⚠ DANGER: Before replacing any oven component, ensure the oven is removed from any power source. Replacing a component while the oven is plugged in can result in serious injury or death.

⚠ CAUTION: Before removing/installing any component, make sure it is disconnected from the wire harness (where applicable).

⚠ NOTE: Hardware listed is required for installing component to oven.

To open the top cover:

1. Open the oven door.
2. The top cover is secured to the heat shield via 2 sheet metal screws (above the oven door). Remove these screws.
3. Open the top cover.
4. Secure the support arms in place.

Figure Reference #	Item Description	Item Part Number	Hardware Description	Hardware Part Number(s)
1	Cover, Top	I5-9243	Screw, #10-32 x 3/8 lg, PFLH, 100 Deg, SS	101401 (qty 2)
2	Fuse, F1, 12-amp	100592	None	None
3	Fuse, F2, 12-amp	100592	None	None
4	Fuse, F3, 12-amp	100592	None	None
5	Fuse, F4, 12-amp	100592	None	None
6	Fuse Holder	103548	Screw, #8-32 x 3/8, PPHD, Int Sems, SS	102921 (qty 4)
7	Heat Shield/Support Bracket	I5-9224	Screw, Torx Head, Sh Mtl, 3/8, Cres	102752 (qty 2)
8	Keypad*	I5-9247	None	None
9	Power Supply	101211	Screw, M3 x 8mm, Sems, PPHD, Cres	103444 (qty 3)
10	Power Supply Bracket	I5-9280	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 2)
11	Relay (K1 - Filament)	101273	Nut, Keps, Hex, #6-32, Ext Tooth, Cres	102961 (qty 2)
12	Relay (K2 - Anode)	101273	Nut, Keps, Hex, #6-32, Ext Tooth, Cres	102961 (qty 2)
13	Relay (K3 - Monitor)	101273	Nut, Keps, Hex, #6-32, Ext Tooth, Cres	102961 (qty 2)
14	Relay (K6 - Voltage)	101272	Nut, Keps, Hex, #6-32, Ext Tooth, Cres	102961 (qty 2)
15	Relay (K7 - Mag Fan)	101273	Nut, Keps, Hex, #6-32, Ext Tooth, Cres	102961 (qty 2)
16	Relay (K8 - Stirrer)	101273	Nut, Keps, Hex, #6-32, Ext Tooth, Cres	102961 (qty 2)
17	Relay Bracket	I5-9261	Screw, #8 x 3/8 PH Mod Truss, Cres	101682 (qty 4)
18	Relay, Solid State (K4/K5 - Heaters)	101286	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 2)

* NOTE: Additional keypad detail on Figure A-6, page A-8.

Replacing Items - Removing Top Cover Required (Figures A-4, A-5, A-6)

⚠ DANGER: Before replacing any oven component, ensure the oven is removed from any power source. Replacing a component while the oven is plugged in can result in serious injury or death.

⚠ CAUTION: Before removing/installing any component, make sure it is disconnected from the wire harness (where applicable).

⚠ NOTE: Hardware listed is required for installing component to oven.

To remove the top cover:

1. Open the top cover (see page A-5 for instructions).
2. Remove the hinge screws located near the back of each side of the top cover.
3. Detach the support braces from the oven frame. (The should remain attached to the top panel.)

⚠ CAUTION: When detaching the support braces, be sure to support the top cover to prevent it from collapsing onto the components in the electrical compartment.

4. Remove the top panel and place it somewhere safe.

⚠ CAUTION: The top cover has critical components attached. Handle it carefully.

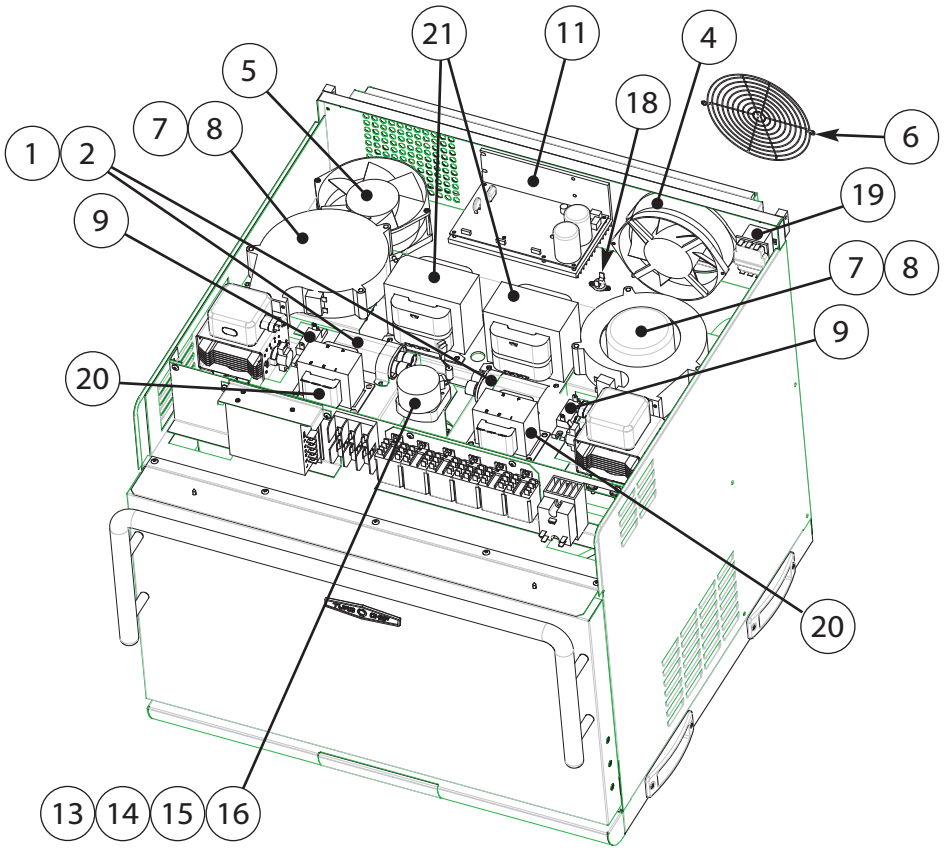

Figure A-4: Removing Top Cover Required

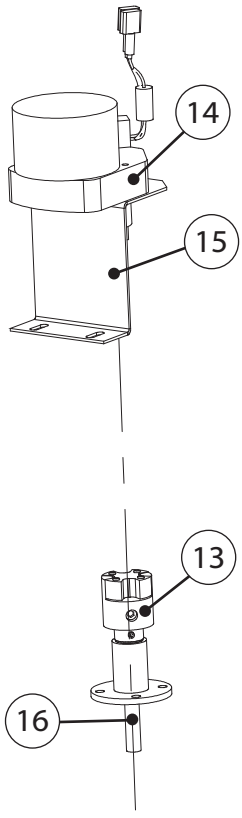

Figure A-5: Stirrer Motor and Assembly Detail

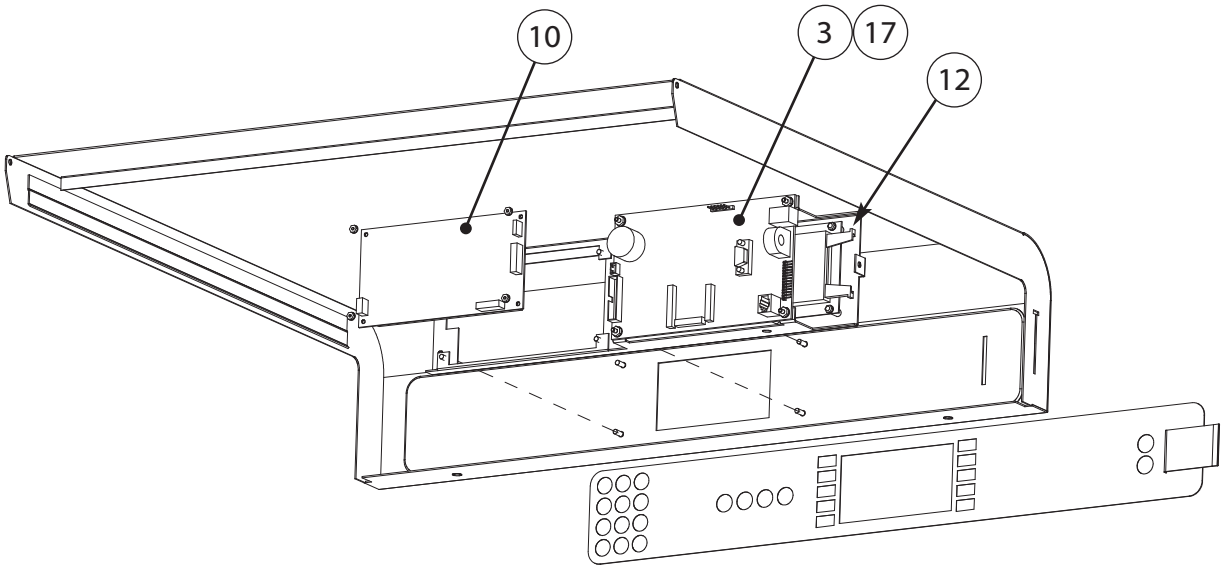

Figure A-6: Top Cover Detail

Figure Reference #	Item Description	Item Part Number	Hardware Description	Hardware Part Number(s)
1	Capacitor, High-Voltage	100232	None	None
2	Capacitor Clamps	100134	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 2)
3	Control Board	CON-7002	Nut, Keps, Hex, #6-32, Ext Tooth, Cres	102961 (qty 4)
4	Cooling Fan (Exterior)	TC3-0433	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 2)
5	Cooling Fan (Interior)	TC3-0433	Screw, #8-32 x 2 1/2 Lg, PPHD, SS	101661 (qty 2)
6	Cooling Fan Finger Guard	100086	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 2)
7	Cooling Fan, Magnetron	100083	A) Screw, #10-32 x 2 1/4, PPH, SS B) Washer, Lock, #10 Int Tooth, Cres	A) 101484 (qty 3) B) 102290 (qty 3)
8	Cooling Fan (Magnetron) Bracket	I5-9263	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 4)
9	Diode, High-Voltage	100481	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 2)
10	Display	103360	Nut, Keps, Hex, #4-40, Ext Tooth	102960 (qty 4)
11	Motor Controller	100446	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 4)
12	Smart Card/USB Port	CON-7005	A) Standoff, Round, .12 ID, .25 OD x .375" B) Nut, Keps, Hex, #4-40, Ext Tooth	A) 101923 (qty 4) B) 102960 (qty 4)
13	Stirrer Hub	104132	Set Screw (Provided)	N/A
14	Stirrer Motor	I5-9025	Screw, M4 x 0.7 x 8, PPHD, Int Tooth, SS	101672 (qty 2)
15	Stirrer Motor Bracket	I5-9075	Screw, M4 x 0.7 x 8, PPHD, Int Tooth, SS	101672 (qty 2)
16	Stirrer Shaft	I5-9151	None	None
17	Thermocouple, EC	700-1199	None	None
18	Thermostat, Cooling Fans	102086	Screw, #6 x 1/2, PPHD, Drill Point, SS	101687 (qty 2)
19	Thermostat, High-Limit	102075	Screw, M4 x 0.7 x 8, PPHD, Int Tooth, SS	101672 (qty 2)
20	Transformers, Filament	NGC-3061-1	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 4)
21	Transformers, High-Voltage	NGC-3062-1	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 4)

Replacing Items - Removing Left Side Cover Required (Figures A-7, A-8)

⚠ DANGER: Before replacing any oven component, ensure the oven is removed from any power source. Replacing a component while the oven is plugged in can result in serious injury or death.

⚠ CAUTION: Before removing/installing any component, make sure it is disconnected from the wire harness (where applicable).

⚠ CAUTION: Be careful to not tear the insulation when servicing components. Always reset the insulation properly before reinstalling the side panel.

⚠ NOTE: Hardware listed is required for installing component to oven.

To remove the left side cover, remove the screws securing the panel to the oven frame. To re-install the left side cover, you may need to open the top cover (see page A-5).

Figure Reference #	Item Description	Item Part Number	Hardware Description	Hardware Part Number(s)
1	Blower Motor (top)	I5-9040	Nut, 1/4 - 20, Serr Hex Flange, Plated	100906 (qty 4)
2	Blower Motor (bottom)	I5-9042	Nut, 1/4 - 20, Serr Hex Flange, Plated	100906 (qty 4)
3	Blower Wheel (top)	103551	None	None
4	Blower Wheel (bottom)	103550	None	None
5	Cover, Left Side	I5-9301	Screw, #8 Serr, PHD Truss, Black Oxide	101691 (qty 5)
6	EMI Filter	100546	Screw, M5 x 8, PPHD, Sems, SS	101707 (qty 4)
7	EMI Filter Bracket	I5-9257	Screw, #10-32 x 3/4 lg, PPH Sems, Int Th	102937 (qty 2)
8	Heat Slinger	102708	None	None
9	Helper Spring, Interlock Switch*	103599	None	None
10	Interlock Switch, Primary*	102012	Screw, #4-40 x 1", PPH, Sems	102903 (qty 2)
11	Mounting Bracket, Interlock Switch*	I5-9272	Screw, #10-32 x 3/4 lg, PPH Sems, Int Th	102937 (qty 2)
12	Power Cord	I5-9127	None	None
13	Voltage Sensor	100783	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 1)

* NOTE: For more interlock switch detail, see Figure A-11, page A-13.

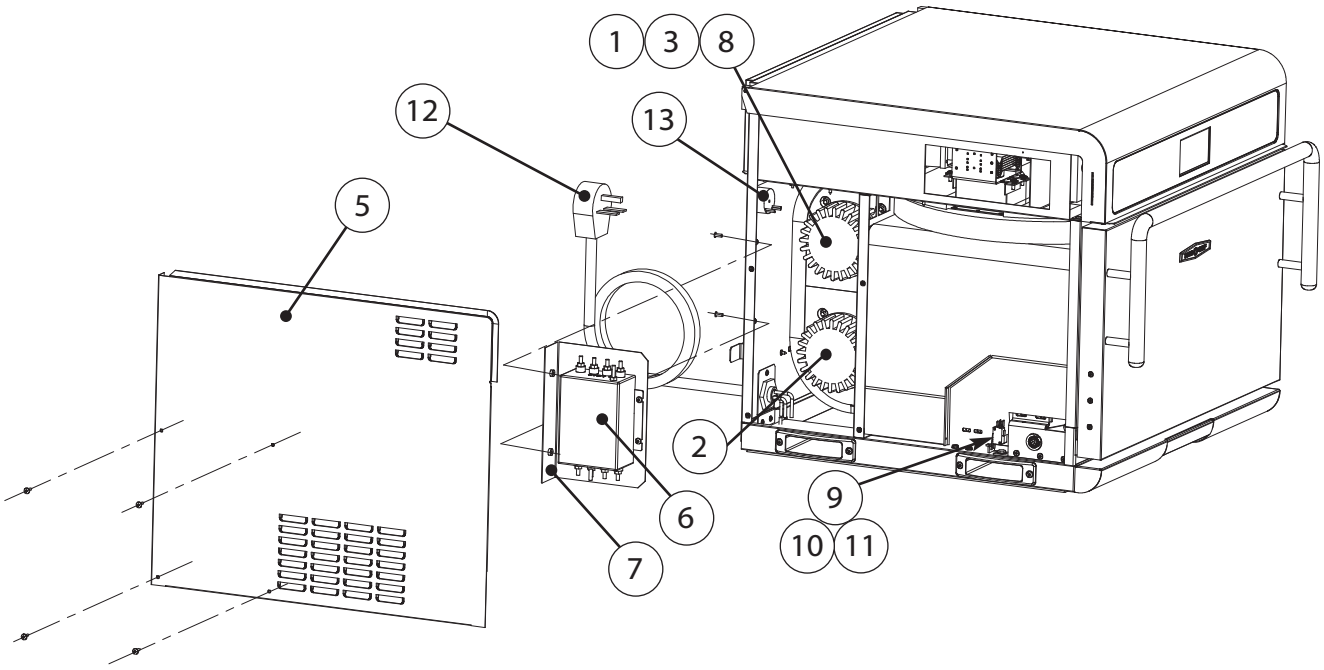

Figure A-7: Removing Left Side Cover Required

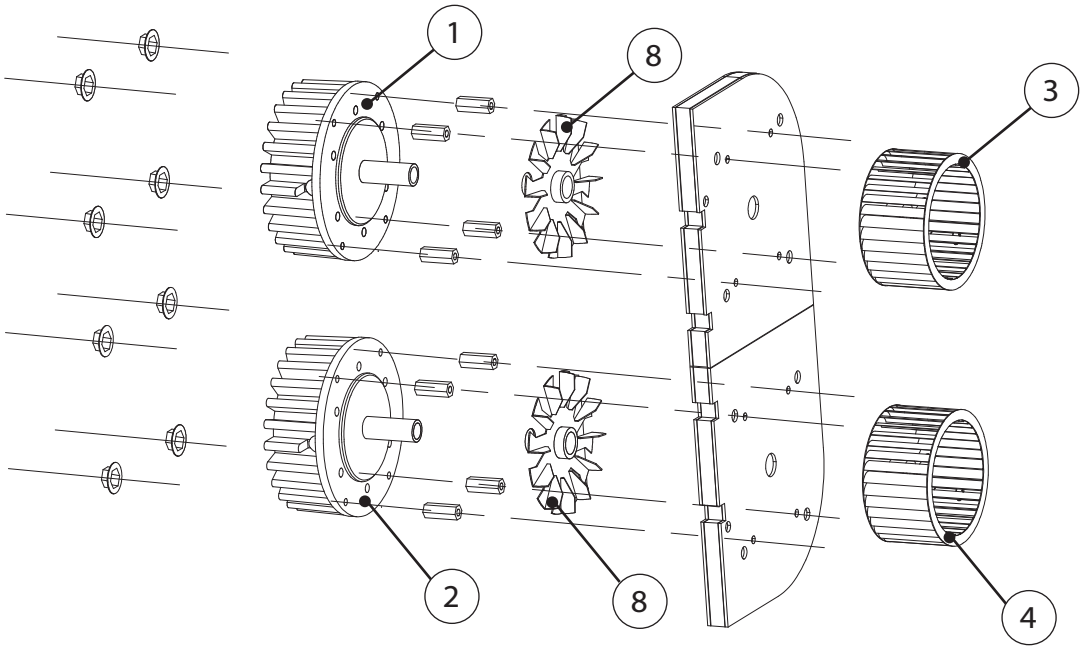

Figure A-8: Blower Motor Assembly

Replacing Items - Removing Right Side Cover Required (Figure A-9)

DANGER: Before replacing any oven component, ensure the oven is removed from any power source. Replacing a component while the oven is plugged in can result in serious injury or death.

CAUTION: Before removing/installing any component, make sure it is disconnected from the wire harness (where applicable).

NOTE: Hardware listed is required for installing component to oven.

To remove the right side cover:

1. Remove the screws securing the panel to the oven frame.

2. Remove the right side cover.

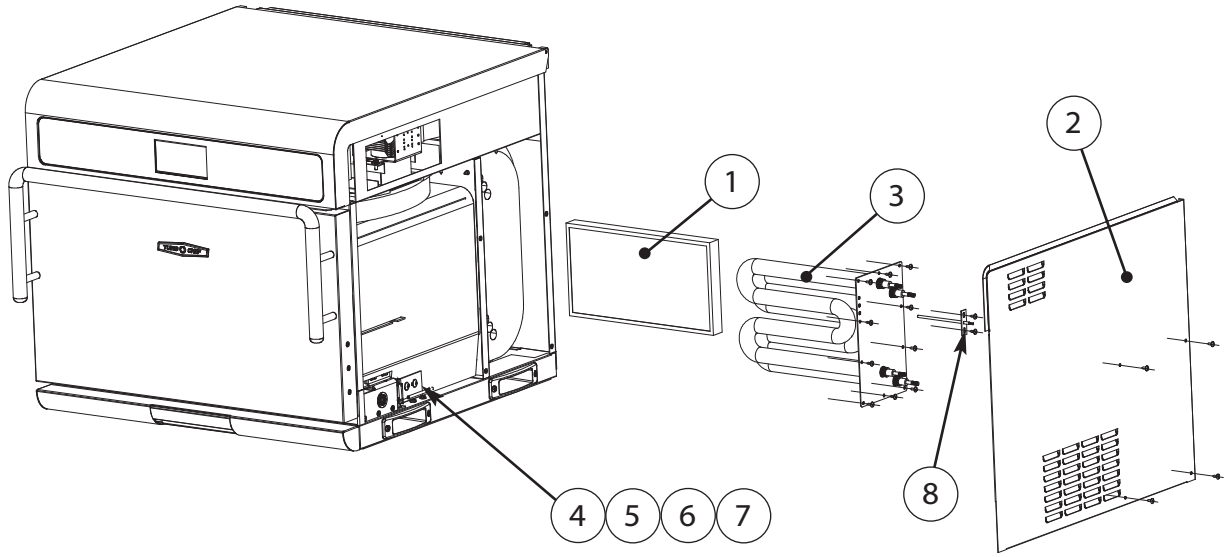

Figure A-9: Removing Right Side Cover Required

Figure Reference #	Item Description	Item Part Number	Hardware Description	Hardware Part Number(s)
1	Catalytic Converter	I5-9066	None	None
2	Cover, Right Side	I5-9302	Screw, #8, Serr PPHD, Truss, Black Oxide	101691 (qty 5)
3	Heater Assembly	I5-9284	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 10)
4	Helper Spring, Interlock Switch*	103599	None	None
5	Interlock Switch - Monitor*	102012	Screw, #4-40 x 1", PPH, Sems	102903 (qty 2)
6	Interlock Switch - Secondary*	102012	Screw, #4-40 x 1", PPH, Sems	102903 (qty 2)
7	Mounting Bracket, Interlock Switch*	I5-9272	Screw, #10-32 x 3/4 lg, PPH Sems, Int Th	102937 (qty 2)
8	RTD, Cook Cavity	HHC-6517	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 2)

* NOTE: For more interlock switch detail, see Figure A-11, page A-13.

Replacing Items - Removing/Opening Multiple Covers Required (Figures A-10, A-11)

⚠ DANGER: Before replacing any oven component, ensure the oven is removed from any power source. Replacing a component while the oven is plugged in can result in serious injury or death.

⚠ CAUTION: Before removing/installing any component, make sure it is disconnected from the wire harness (where applicable).

⚠ NOTE: Hardware listed is required for installing component to oven.

To remove the left side cover, see page A-9.

To remove the right side cover, see page A-11.

To open the top cover, see page A-5.

Figure Reference #	Item Description	Item Part Number	Hardware Description	Hardware Part Number(s)
1	Hinge, Bracket, Slide, LHS	I5-9196	Nut, Keps, Hex, #8-32, Ext Tooth, Cres	102962 (qty 4)
2	Hinge, Bracket, Slide, RHS	I5-9195	Nut, Keps, Hex, #8-32, Ext Tooth, Cres	102962 (qty 4)
3	Hinge, Cam, Weldment, LHS	I5-9313	Washer, Nylon, Hingepin	C0504 (qty 1)
4	Hinge, Cam, Weldment, RHS	I5-9314	Washer, Nylon, Hingepin	C0504 (qty 1)
5	Hinge, Guide, Switch Slide, Lower	I5-9316	Screw, 10-32 x 3/8 lg, PFLH, 100 Deg, SS	101401 (qty 2)
6	Hinge, Guide, Switch Slide, Upper	I5-9315	Nut, Keps, Hex, #8-32, Ext Tooth, Cres	102962 (qty 4)
7	Hinge, Gusset, LHS	I5-9178	Nut, 1/4 - 20, Serr, Hex Flange, Plated Steel	100906 (qty 2)
8	Hinge, Gusset, RHS	I5-9179	Nut, 1/4 - 20, Serr, Hex Flange, Plated Steel	100906 (qty 2)
9	Hinge Module, Base	I5-9193	None	None
10	Hinge, Torsion Bar	I5-9144	Spacer, Adjustment	Call TurboChef
11	Hinge, Weldmt, Ctrblnce Brkt, LHS	I5-9326	Screw, 10-32 x 3/8 lg, PFLH, 100 Deg, SS	101401 (qty 3)
12	Hinge, Weldmt, Ctrblnce Brkt, RHS	I5-9327	Screw, 10-32 x 3/8 lg, PFLH, 100 Deg, SS	101401 (qty 3)
13	Magnetron (Left)	NGC-3015	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 4)
14	Magnetron (Right)	NGC-3015	Screw, Sh Mtl #8 x 1/2, Serrated PHTRH	101688 (qty 4)
15	Thermostat, Magnetron (Left)	102070	Screw, Sh Mtl, Drill Point, 6-32 x 3/8, PPHD, Zinc	101684 (qty 2)
16	Thermostat, Magnetron (Right)	102070	Screw, Sh Mtl, Drill Point, 6-32 x 3/8, PPHD, Zinc	101684 (qty 2)
17	Waveguide (Left)	I5-9330	Nut, Keps, Hex, #10-32, Ext Tooth, Cres	102963 (qty 9)
18	Waveguide (Right)	I5-9330	Nut, Keps, Hex, #10-32, Ext Tooth, Cres	102963 (qty 9)
19	Waveguide Gasket (Left)	I5-9331	None	None
20	Waveguide Gasket (Right)	I5-9331	None	None

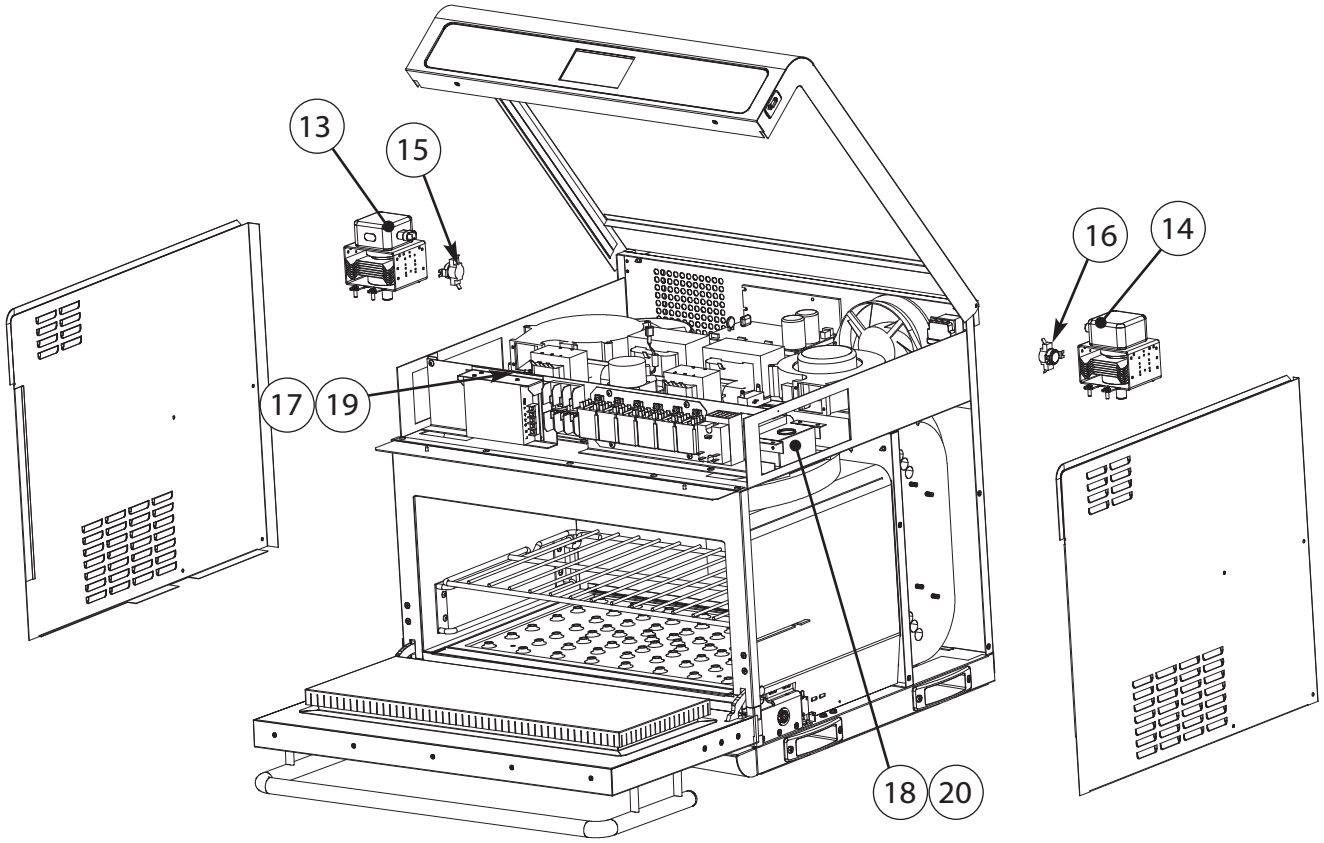

Figure A-10: Removing/Opening Multiple Covers Required

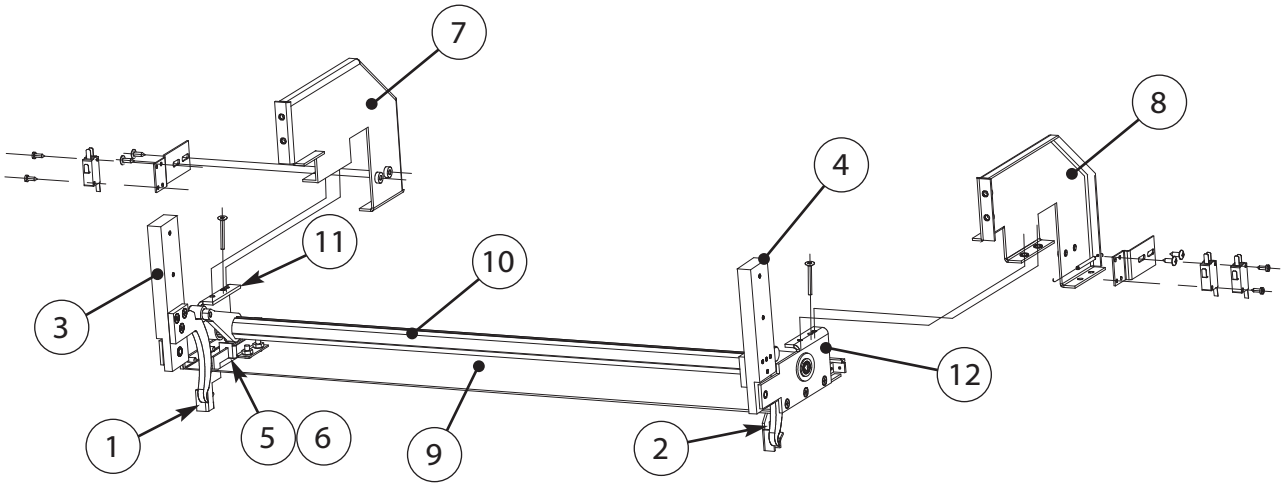

Figure A-11: Counter Balance Assembly, Hinge, and Switch Detail

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